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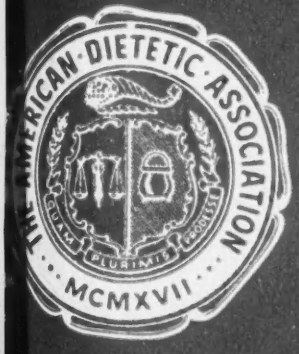

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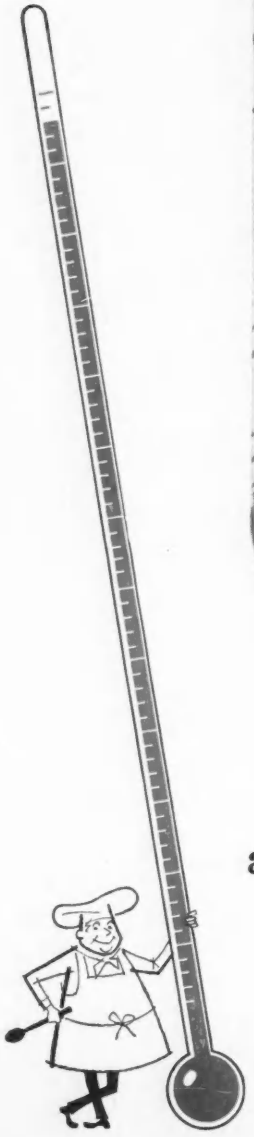

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What Does Hospital Administration Expect of the Dietitian?[1]

GEORGE E. CARTMILL

Director, Harper Hospital, Detroit

WITHIN my experience, I would say that hospital dietetics finds itself in much the same position as the other professions that play so vital a role in the general hospital picture today. A wide knowledge of the standards by which good hospital care can be differentiated from poor has resulted in a tremendous demand for professional people. At the same time, the professions are suffering real competition from job opportunities which never offered competition in prewar days. Without even considering the demands which the public may make on the professions, these two factors alone have resulted in an apparent shortage of qualified people.

When we are confronted with a shortage in any given category of personnel, we really have only two choices: either we produce many more *fully* qualified people, or we begin to split up the complete job and train people in parts of it. The minute we split up the job, we're faced with a problem of administration. Administration must be vested in a person who has technical know-how plus the ability to visualize the end result and coordinate its component parts toward the production of that result.

Because these shortages exist in every professional field, we find ourselves more concerned today about administration than almost any other one thing. Every association in the hospital field is talking about administration.

What about dietetics? I have the impression that good hospital administration throughout the country is looking for good administration as the primary factor in the whole dietetics picture.

College vs. Internship Experiences

I visualize the dietitian as a food service executive. She has four hard years of scientific preparation. She enters an internship, I would hope, fully equipped with the facts concerning nutrition, physiology, chemistry, and metabolism. The internship should pull these things together in the field of practical experience. Her prime function in the work situation is to produce and serve good appetizing food on an efficient, and therefore economical basis for people who are temporarily other than normal, physically and emotionally.

Now even in my large hospital, frequented only by medical specialists, variations from a normal diet do not run over 25 per cent. Put another way, 75 per cent of our patients must be satisfied in the same way they would be in a restaurant or hotel.

Our dietitian becomes, then, a member of a large and—we hope—well-knit team whose combined effort must be aimed toward taking care of the necessities while their "customers" are returned to their normal existence. There are many things which can be learned only by doing, and it seems to me that these are the things on which an internship should concentrate. You can teach a home economics student science and technique, but she doesn't learn how to approach a sick patient until she gets into her internship. She may know all about carbohydrates and vitamins and proteins to a fine degree, but she has little conception of translating this knowledge into a palatable meal for a diabetic patient until she deals with that person.

The undergraduate gets little chance to experience "the feel" of real administrative responsibility. She should get this in her internship. Administration becomes necessary as the size of the operation and the limited qualifications of the people engaged in it become factors of the whole. Basic homemaking is a real challenge but it becomes even more so when a staff of servants is added. Problems are not the same. In the former situation there was work to be done. In the latter, there is administration, and sometimes the administration is more nerve-racking than the work itself. But, as most of you know, approached properly, administration offers much satisfaction.

Hospitals' Needs

In my opinion then, what the hospital field needs is a food service executive—a real management

[1] Presented at the Conference of Directors and Staffs of Approved Dietetic Internships in St. Louis, October 15, 1955.

person—who knows how to plan, organize, supervise, and control. I think the basic misunderstanding of the profession may be that we've neglected the management function in favor of the more mysterious scientific side. Dietitians have pointed with great pride to the ability to calculate diets but without enough pride to the even more important ability to produce economical, original, and appetizing food for a captive clientele who didn't want to come to the hospital to eat in the first place.

When a dietitian comes to me, I assume that she knows about calories and low sodium, for example, in the same way I assume that my accountant knows about credit, debit, and trial balance. These are tools of the trade and basic.

Relations with Superiors

Four years of college and a twelve-month internship have given her the history and principles of dietetics together with some practical experience. The rest is up to her. Her place in the hospital organization has to be defined and from there on, she is a worker on the team—not worried as to status or competition from other professions, for her status will come as surely as she performs a creditable job. (And here, although I am well aware that there may be many bad hospital administrators, I do not sympathize in all instances when I hear of the poor dietitian whose administrator won't have anything to do with her or her problems. If she's the right girl, she'll make herself heard. Nobody inherits either the regard or confidence of his fellow workers. He earns it!)

I'm told that many of the problems of dietary administration arise from this lack of rapport and well-defined relationship between the dietitian and the hospital director. One of the most helpful discussions of this relationship had to do with the subject of executive communication, which is simply another way of saying executive behavior, and was written by Professor Robert D. Gray of the California Institute of Technology in the *Oil and Gas Journal* of August 30, 1954 (1). He says, "One of the cardinal rules to follow in getting along with your superior can be summarized as: 'Never let your boss be surprised.' This means that your boss should hear first from you about any unusual success you have had or any unusual service you have extended . . . It also means that he should hear about your boners from you . . . In short, a great deal of your success on your job will depend on keeping your boss informed."

Here I would say that I am not attempting to tell you how to teach administration. However, I am attempting to point out two areas of the administrative spectrum in which I believe most misunderstanding arises—communication and responsibility. Again paraphrasing Professor Gray, there are three preliminary essentials for any supervisor to fulfill the obligations and duties inherent in his position:

(a) He must acquire a knowledge of the duties and responsibilities of his position.

(b) He must understand the needs (the accountability) of his superior.

(c) He must understand his superior.

The preliminary essential is to know your job. Are you entirely clear as to the scope of your responsibilities? If there is doubt, sit down and talk it over with your superior. Better yet, outline your thoughts in writing to use as a point of departure.

Delegation, Authority, and Responsibility

Administration implies delegation, so let's talk about that for a minute. The hospital director is primarily a coordinator of persons who know more about their specialties than he does. To produce results for which he is held accountable to the Board, he must delegate authority and responsibility, and it is here, I believe, that most misunderstanding arises.

There are a few things usually delegated to every department head with the entire responsibility for carrying them out. You have authority to make decisions on these problems without referring them to your superior. Many people feel that everything that is delegated to them is in this category. Actually, only the most routine items should be classified here.

Most work delegated to you will follow a second pattern. You have been delegated authority and responsibility to take action on certain problems, but it is expected that you will report your action to your superior. These reports will be on a regular basis and of a very concise variety. You should report only results, not a blow-by-blow account of the entire operation.

Every job includes still another kind of delegation—the authority *and responsibility* to make recommendations on any subject which affects your department, yourself, and the hospital as a whole. The ability to do this constructively, as well as the ability to accept this kind of activity from others, is where most of us have great difficulty. What may appear to be just plain "nosiness" may well be an objective comment meant for the good of the entire institution. Seldom does good food service preserve its reputation in the absence of good nursing and vice versa.

In other words, in addition to a written job description, analyze which of these three areas of delegation may apply to your activities and let your professional sense guide you.

The second preliminary essential, we said, is to know the needs or the accountability of your superior. One of the commonest misconceptions of management on any level is the belief that delegation of authority or responsibility means that they have been passed from one person to another. The fact

that I may delegate the responsibility of the entire food service to my dietitian does not relieve me of any of the responsibility to my Board of Trustees for its quality. Everyone is accountable for what has been delegated to him, even though he may have delegated it to someone else. Therefore, it is imperative that your superior know what decisions you have made. He must include them as his decisions.

Understanding Your Superior

The third preliminary essential is to understand your boss. This means as an individual and is so basic as to obviate discussion. It refers to the extra consideration on your part which makes life a little more livable for him—the Golden Rule perhaps. There are four main supervisory activities, all of which require reporting. These are:

(a) *Progress on long-term assignments.* Every executive works on projects which may be defined as long-term. Most of us have parts of our job which are never finished. Periodic reports are good not only for the boss, but for you. His report may be only the stimulus for you to do the necessary organization of your own thoughts.

(b) *Completion of assignments.* No executive, except those who want bitter experience, can assume that a job has been done just because someone was told to do it. Don't feel that he is "on your back" if your director inquires periodically as to your progress. Some of his inquiry could be prevented by your report of the job completed.

(c) *Deviation from approved plans.* Once a schedule of operations has been decided mutually, any deviation from that schedule should be reported together with reasons why. Plans may need to be changed in many other places unknown to you because of your change.

(d) *Anticipated problems.* This is almost the most important, for it involves the whole executive function of future planning. The successful manager is more interested in what is happening next year than that he had a successful year last year. Today's problems must be solved, but they might not have been so serious if there had been some advance planning.

Summary

What do I expect from my dietitian? I expect a food service executive, prepared by formal education with the tools of her trade. These include a knowledge of basic nutrition, techniques of food preparation, use of equipment, and *a realization that only by working through a variety of kinds of people will she produce her end product.* Only in her internship as yet can we expect her to spend a great deal of time in educational experience along the practical lines of supervision, training, coordination, and administrative relationships with medical staff and other department heads on the hospital team. In addition, we expect her to get her experience in dealing with sick people. We pointed out that 75 per cent or more of all of the food she produces and serves is meant for people who are on a so-called normal diet, whether they are patients in the hospital or personnel in the cafeteria. We have spent several paragraphs specifically directed to the problem of communication and delegation at the top level—not that this is of any greater importance than other phases of her activity, but because observation seems to point up this particular area as a weak one in her present preparation.

You probably knew better than I the answer to the question around which I have been speaking. As a profession, you have done superb work. However, until our patients and personnel refer to hospital food without an automatic frown, we both have some work to do!

REFERENCE

(1) GRAY, R. D.: Bone up on what your boss wants to know . . . and give it to him—straight! Oil and Gas Journal 53: 84 (Aug. 30), 1954.

Motivating Obese People to Reduce

Finding a basis for motivation, as in the direction of social or professional advantage, is far more helpful in handling difficult cases of obesity than attempting to use scare techniques based on health, according to a report from Cornell University. Too often, resistance has already been engendered by family nagging.

Thirty-nine private physicians referred 168 "resistant" patients to the Cornell Obesity Clinic. About one-fourth showed a satisfactory response in weight reduction, another fourth showed appreciable progress, one-fourth showed only slight success, and one-fourth received a rating of "complete failure." Least success was achieved with those who were emotionally unstable and those who had been obese since childhood

The degree of success with individuals of intermediate stability depended largely on the strength of motivation. The researchers recommend that management of obese patients in private practice or in clinics should include an early effort to evaluate emotional stability as a basis for estimating success and for planning experimental techniques.—*From Report of the Scientific Director, 1955. N. Y.: The Nutrition Foundation, Inc., 1955.*

The Future in Equipment[1]

JOHN W. HARGRAVE, A.I.A.

Vice-President, Food Facilities Engineering Society, and *Architect and Consultant, Montgomery, Ohio*

AS IT is composed today, the food facilities industry is the child of the rangemaker's foundry, the tinner's bench, and the cabinet maker's shop. Each craftsman made his product according to his standard, fulfilling the user's needs as understood, with emphasis on durability of construction, ornateness of appearance, and economy of fuel consumption. He was living in the last of the Victorian era with its scroll-saw architecture, mohair sofas, and handlebar mustaches.

Following World War I, there appeared in America a new school of industrial designers who first found acceptance in the motor car industry, when the teardrop became the symbol of sleekness and "streamlining." It was a healthy change which also affected the rangemaker and his product; ornament was removed, and eventually even functional trim bars. While the original reason was to reduce cost and to keep in tune with national trends in design, an auxiliary effect was improvement in sanitation and maintenance work.

During the late twenties, the alloy metals came into general acceptance: monel metal, nickel silver, and early forms of stainless steel. To the kitchen equipment manufacturers, these introduced needs for new equipment for forming, welding, and polishing, and also the threat of permanence of equipment, removing the steady market for replacements which had been the economic backbone of the industry. Many old firms disappeared or consolidated, while new fabricators and machine makers appeared in the market place. For a brief while, there was a "glass and enamel" era, with glass considered the ideal surface for all applications from table tops and cooking pans to exterior building facing. Finally, the public health officer widened his influence from the Marine hospitals to include all places in which public health is affected.

Twenty-five years ago, the Great Depression removed more suppliers; then, under NRA, the industry was united for the first time, an association which has continued ever since. World War II was an international struggle for survival which forced even further simplification and unification of design, most evident to the dietitian in the reduction of the assortment of pans and jars available. This trend, incidentally, is being carried further today in the work of the Committee on Dimensional Standards of the American Standards Association. During World War II, new fabrication techniques were also developed, and much war work was given to the food facilities industry, introducing new standards of accurate measurement and mass production methods, as well as training new workers in welding and other fabrication skills.

Ten years ago introduced a new post-war era. Many of the pre-war products were discarded for better ones, new standards of sanitation were applied, and a different group of people dictated choice of equipment. Dietitians had replaced many a foreign chef or steward; with the health officers, you were demanding products which not only were attractive but durable and always easy to keep sanitary. No longer did you have cheap labor as needed, nor could you stretch your budget to purchase frequent replacements or repairs.

Where does the food facilities industry stand today? It faces uncertain times, reflecting your dilemmas. Each manufacturer wonders what you will want next and whether you will agree on any one thing long enough so that he can design and produce a standard model which can be manufactured by mass production. He hears conflicting claims for priority of interest in design from the sanitarian through the National Sanitation Foundation, and from the labor union business agent who wants to keep his members busy at accustomed jobs. The equipment manufacturer's own vested interest in plant, tools, inventory, and past designs is, of course, also involved. Finally, his customers demand better equipment at lower costs when everything he purchases is more expensive.

Resources in the Future

What resources are available out of which the future will be spun? Of course, there are the basic metals long associated with food service equipment: steel, copper, tin, and nickel, with their alloys of

[1] Presented at the 38th Annual Meeting of The American Dietetic Association in St. Louis, on October 21, 1955.

bronze, monel, and stainless steel; or coated forms, such as galvanized steel or enameled metals. There are the forest products: wood, plywood, cork, fiberboards, and hardwood. The chemical industry has also contributed the various types of plastics in sheet and board form and the synthetic paint finishes. There are glass products used for food containers, such as urn jars and bakery ware, for shielding and decoration, and for dinnerware. Also, fiberglass is now used in many new ways as a tough fiber or as insulation.

Possibly the most exciting resource is energy in its many forms. Once limited to wood and coal, then followed by oil and gas, there has now been added electricity as a heat source in hot plates and heating elements, in infra-red form, in radar, or through electronic induction. Each heat source has a specialized application. The newest forms of energy —nuclear fission and solar heat—have no commercial application now, but may become the source of energy for making electricity or high pressure hot water or steam for conventional use, or they may be applied in an entirely different way through radiant treatment of foodstuffs to change their natural characteristics.

Another exciting field is in the matter of automatic controls of operations formerly requiring human attention. The most common in the kitchen is the thermostat in oven or in refrigerator to control temperatures automatically, and the automatic timer which either rings a warning signal or turns off an electric circuit. There are now devices which store information and then give answers, such as collecting information from selective menus, giving the total servings of each item needed for a meal, the amount of foods required to fulfill the total meal demands, and automatic inventory controls. One manufacturer is even suggesting applications of television combined with an intercommunication system as being suitable for a hospital.

What of the manufacturing and design resources? Of course, these include proven products, designs, and methods of construction of old-line manufacturers, as well as new ideas introduced, sometimes by improvisation, of new manufacturers not having patterns for castings or dies for forming products in the traditional way. Many suppliers are bidding on designs which they did not originate. In large measure, the function of design has shifted from the manufacturer to the architect and engineer and their independent food facilities consultants who may have less interest in uniformity of product than in meeting the particular needs of a client in a specially designed building.

One of the most promising resources for the future of food service equipment lies in the research work being done by many groups and individuals. One sees the results of more than a million dollars spent in research and publicity of new ideas by the National Sanitation Foundation. Similar efforts are going forward in many colleges and laboratories, each with a different focal point of interest—studies of nutrition and market promotion of dairy, meat, or cereal products, to mention examples. The food facilities manufacturers are busy, too, seeking new ways of preparation and distribution of food and equipment; in this they need your cooperation.

Trends of Change in Equipment

In outline form, here are some of the trends which appear evident in the equipment of the future:

(a) Emphasis on sanitation.

(b) Continued emphasis on economy of design and operation.

(c) New equipment designed to simplify special problems of dietary management, coupled with high-pressure selling to induce the acceptance by management of such ideas.

(d) More accurate controls for equipment, i.e., devices which will receive complete instructions for a cooking or baking cycle, and follow the process through by automatic controls from these directions; automation in forms of conveyor systems and other step-saving devices.

(e) Centralization of similar operations to reduce food preparation labor and supervisory cost. This is most evident in pre-preparation of vegetables and meats and in the purchase of bakery goods, rather than making them in small quantities.

(f) More designing by independent consultants rather than by manufacturers, especially on projects requiring public and competitive bidding.

The Future in Equipment

Considering its heritage, present circumstances, and resources, what of the future in food facilities equipment? This will continue to be an expression of your work as dietitians. As you learn better management and administration, you will require new tools. If you are wise, you will seek first to state the function of the equipment you require, describing just how it must perform even though the ideas may seem fantastic. First, you will have experimental answers to your requirements, seldom perfect but generally improvements over equipment formerly accepted as standard.

I predict that you will continue to centralize more of your work and will demand better means of distribution of food to points of service, whether such distribution is by bulk container, conveyor system, pipe line, or temperature-controlled vehicles.

I predict that you will find ways to reduce the labor needed to produce good food in quantity; that each dietitian will supervise larger groups of workers through visual and audible intercommunication media; that you will demand more versatile equipment, portable to be used in places and dictated by

your plan of organization and work assignment for each menu; that you will ask for greater worker comfort, for adjustable heights in equipment, for mechanical lifting devices, for reduction of load sizes to less than 25 lb. when lifting must be done by women.

You who work in the hospital, institutional, or commercial kitchen have opportunities to gather information which would be most valuable to the manufacturer in his efforts to give you what you need. Have you ever made a record of the number of servings of a given food which you get out of a certain pan? Do you know how long it takes to do a complete operation, whether it be peeling a bushel of potatoes or whipping a bowlful of mashed potatoes? Have you ever analyzed labor costs for the things you prepare? The standard answer is, "No, it's too difficult; too many things are done simultaneously." The same answer was given in industry before management controls were used.

Are you a "do it myself" dietitian, or do you teach and guide your associates until they, too, are proficient? Have you found new ways to do things better, and did you improvise tools or equipment for your technique?

For more than thirty years I have been in close contact with the industry which makes the equipment you use in dietetic work. From this experience, I can assure you that the men and women who serve you are anxious to make your work easier through better facilities. You have contributed many ideas in the past, and I am confident that as your profession continues its growth into wider fields of service, you will uncover new needs for equipment which neither the manufacturers nor the consultants can now predict. Thus, you will determine the future in equipment.

Food and Taxes Over the Ages

"Dear Director of Internal Revenue: Enclosed you will find 1,029 raisins due as final payment on my income tax." The time—not today! but approximately 1054 B.C. during the reign of David, Biblical king of Israel. According to historians, raisins represented the major portion of barter used as tax payment in those days.

Food played an important role at tax-collecting time for many centuries. Before David's time, rules had decreed that payments be made in "transportable" meats and easily stored foods. "Transportable" more often referred to meat "on the hoof" than to cured meats in those days. The use of cattle as money was so wide spread that we have a carry-over in the word "pecuniary," which comes from the Latin word for cattle.

In Caesar's day, salt was a precious commodity and was used for tax payments. In turn, the government passed on bags of it to soldiers as the part of their pay known as "salarium." From this word comes both the tax payer's and tax collector's "salary."

Governments made a habit of paying out the collected edibles and transportables rapidly as salary or as rewards for bravery. In Indo-China, soldiers deserving medals for valor were given treasury orders for as much meat and other food as the immediate family could use during the soldier's lifetime. Alexander the Great is known to have promoted soldiers who brought in new and unusual meats, fruits, or vegetables.

South of our own borders, the Aztecs kept huge bars of crude cacao in the treasury as monetary reserves. They used cacao beans as currency and for soldiers' pay and accepted it for taxes and debts. This "money" had to be spent or eaten while fresh, so that there was little successful hoarding by either the payer or collector of taxes.

Colonial days in this country also saw a variety of foods and crops used for barter. The Assembly in Virginia declared tobacco as legal tender for tax purposes. As a result, that crop soon acquired the status of currency. In addition to debt payments, it was often used to pay the minister's salary or to pay a shipowner in advance for the passage of a future wife. Later, Colonial history records that pastors were paid "three hammes and a parrsel of pottattues" per month. New England school teachers received two hams a year as arithmetic tuition. In that same region, folks often used grains—wheat, corn, rye, and barley—as "money." It could be taken for granted that the tax collector and the store keeper exercised Yankee shrewdness on the quality and amount of the crop accepted as payment.

Although the peanut was a popular "curiosity crop" in the colonies, there seems no evidence that it was ever used as "money" in North America. Many years before this, however, the ancient Peruvians had placed jars of peanuts in graves, suggesting a rating of value comparable to the precious metals. Perhaps the Peruvian tax collectors were truly "working for peanuts."—*Contributed by Alice A. Damon, University of Kansas Medical Center, Kansas City, Kansas.*

Cooked, Edible Meat in Parts of Poultry

II. Geese[1]

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PRODUCTION of geese for meat and feathers has been practiced for centuries in Europe. There was some goose production on farms in the corn belt area of the United States in the early part of the present century, but the goose industry then declined for a number of years. It is now on the increase on specialized goose farms.

Improvements in breeding, feeding, and management of geese have resulted in very rapid growth (more than a pound per gosling per week), more efficient use of feed, and far better egg production and hatchability than was possible some years ago. Thus the goose is becoming a competitor of broilers and turkeys as a source of poultry meat.

Many consumers believe that goose is not a "good buy" because of fat loss in cooking. This is true, especially in case of mature geese that have been fattened for market. However, today most geese are grown and sold for meat before they reach maturity. Young growing geese, like other young animals, are not very fat. There is not much information available on the dressing and cooking losses and per cent edible meat in geese. Snyder and Orr (1953) reported 51 per cent edible meat based on the ready-to-cook weight of twelve-week-old goslings.

The objectives of this study have been to: (a) obtain additional data on the dressing and eviscerating losses of young geese eight to twenty-four weeks old, (b) determine the percentage of cut-up parts of the whole carcasses of ready-to-cook geese, (c) determine the cooking loss and percentage of edible meat of the ready-to-cook carcasses and parts of young geese eight to twenty-four weeks old.

[1] This study was financed in part by a grant-in-aid to the Institute of Nutrition and Food Technology, The Ohio State University, by the Poultry and Egg National Board, Chicago. Received for publication November 28, 1955.

Procedure

Nineteen young geese were used. Five were eight to ten weeks old, 7 were ten to twelve weeks old, and 7 were twenty-four weeks old.

The birds were packer-dressed by bleeding; scalded at 160° F. for 45 seconds; and picked on a picking machine and singed. They were weighed before and after bleeding and again after singeing in order to obtain blood and feather losses.

The birds were cooled 2 hr. in a tank of cold running tap water; drained; and packaged in moisture-proof bags. They were frozen at −20°F. and held at 0°F. for three to six months.

The geese were defrosted by removing the bags and submerging the birds in a can of cold running tap water overnight. They were cut into parts according to suggestions of Winter and Malinovsky (1) for cutting up a fowl and as shown in Figure 1. The parts were wrapped in tared pieces of aluminum foil and weighed. They were placed on a rack in a pan (*Fig.* 2) and cooked at 15 lb. pressure (250°F.) for 45 min., except the twenty-four-week-old birds which were cooked 1 hr.

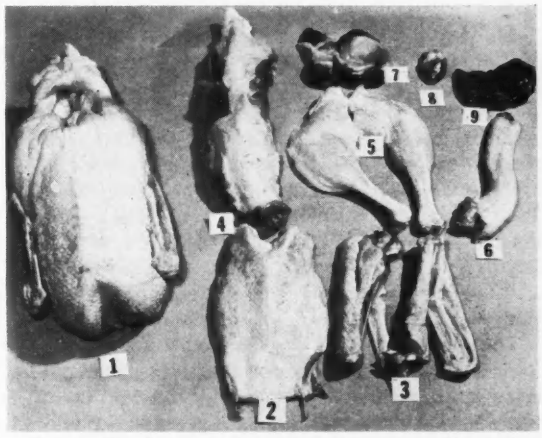

Fig. 1. Ready-to-cook and cut-up goose: (1) ready-to-cook goose; (2) breast; (3) wings; (4) back; (5) legs and thighs; (6) neck; (7) gizzard; (8) heart; and (9) liver.

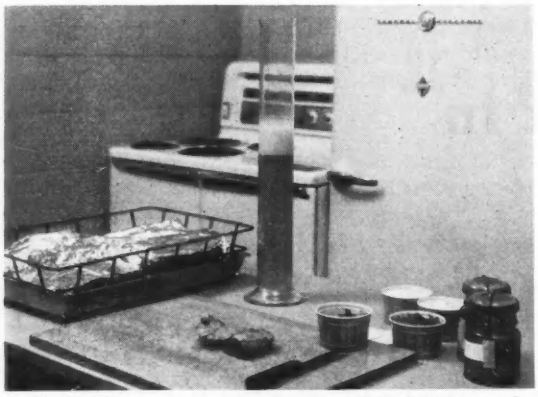

Fig. 2. Left, cut-up parts wrapped in foil for cooking; center, drippings with fat settled at top; right, edible meat removed and placed in containers.

As soon as the autoclave pressure dropped to zero, the pieces were removed. The aluminum foil around each part was loosened and any retained drippings poured into the pan. The foil was closed around the parts and they were again weighed to determine cooking loss. Prior to calculating the cooking loss, the weight of the foil was substracted from the total weight before and after cooking.

The drippings were poured into a graduate cylinder and allowed to stand until the fat settled at the top (*Fig.* 2). It was measured and multiplied by its specific gravity (0.91) to determine the weight. The percentage carcass weight loss as rendered fat was calculated.

The cooked, weighed, and cooled pieces were unwrapped and the meat removed from the bones. The bones were weighed and their weight subtracted from the raw and cooked weights to determine the percentage of edible meat on the raw and cooked basis.

Results

The dressing and eviscerating losses of three groups of geese including those studied in this test (Trial 3) are summarized in Table 1. The average dressing loss ranged from 13 to 14 per cent. The blood accounted for 6.8 per cent and the feathers for 6.6 per cent of the loss for the birds in Trial 3. The dressing loss of the eight- to ten-week-old geese in Trial 3 was 14 per cent, while it was 13 per cent for the ten- to twelve- and twenty-four-week-old birds. Snyder and Orr (2) reported an average dressing loss of 12.6 per cent among goslings varying in weight from 9 to 13 lb. and age from eight to nineteen weeks.

The eviscerating loss based on live weight averaged from 27 to 29.6 per cent for the three groups. The percentage loss was 33 per cent for the eight- to ten-week-old birds in Trial 3, 28 per cent for the ten- to twelve-week-old birds and the same for the twenty-four-week-old birds. The eviscerating loss, based on dressed weight, averaged 19 per cent (22 per cent for the youngest and 17 per cent for the oldest birds in Trial 3). Snyder and Orr (2) reported an average eviscerating loss of 30.9 per cent based on the live weight, and 20.9 per cent based on the dressed weight. The U. S. Department of Agriculture (3) reported an average eviscerating loss of 27.5 per cent, based on the live weight. Among the eviscerating losses reported by Snyder and Orr (2), the head accounted for 6.3 per cent and the fat 3.3 per cent, based on the dressed weight.

TABLE 1

Dressing and eviscerating losses of geese eight to twenty-four weeks old

TRIAL	NUMBER OF BIRDS	RANGE IN WEIGHT	AVERAGE DRESSING LOSS	AVERAGE EVISCERATION LOSS	
				Based on live weight	Based on dressed weight
		lb.	%	%	%
Trial 1	16	8–13	13	29	—
Trial 2	18	7–10	14	27	—
Trial 3	19	9–12	13	29.6	19.0

TABLE 2

Percentage distribution of parts of cut-up geese, based on eviscerated weight

PART	PERCENTAGE OF PARTS IN GEESE		
	8 to 10 wk.	10 to 12 wk.	24 wk.
Legs and thighs	25.7	21.9	20.5
Back	20.5	21.3	21.3
Breast	17.8	23.7	27.3
Wings	15.8	16.0	15.4
Neck	6.9	6.3	6.0
Gizzard	8.3	6.3	6.2
Liver	4.2	3.5	2.2
Heart	0.7	0.9	0.9

The percentage distribution of parts of the cut-up geese is shown in Table 2. This varied more between birds eight to ten and ten to twelve weeks old than between ten- to twelve- and twenty-four-week-old birds. As the birds became older, the legs and thighs constituted a smaller percentage of the carcass while the percentage of breast increased. The giblets also constituted a smaller percentage of the carcass weight as the geese became older. In comparing the parts of goslings and broilers of similar ages (4), it may be seen that the legs and thighs and breast constitute a smaller percentage of the carcass in geese as compared with broilers, while the back, wings, neck, and giblets constitute a greater percentage.

The cooking loss and percentage of edible meat of the cut-up parts of geese are summarized in Table 3. The cooking loss of the carcass, exclusive of giblets and neck, was 33 per cent for the eight- to ten-week old birds, 33 per cent for the ten- to twelve-week-old birds, and 38 per cent for the twenty-four-week-old birds. Fat constituted a higher percentage of the cooking loss as the geese became older. It amounted

TABLE 3

Cooking loss and percentage edible meat of the cut-up parts of geese, based on the raw weight of the parts

PART	COOKING LOSS	EDIBLE MEAT
	%	%
Breast	39.3	47.7
Legs and thighs	34.0	47.4
Wings	26.0	35.7
Back	38.3	32.8
Total carcass, except giblets and neck	35.4	41.4

to 2.8 per cent in the youngest geese, 7.7 per cent in the ten- to twelve-week-old birds, and 9.4 per cent in those twenty-four weeks old. Snyder and Orr (2) obtained an average cooking loss of 35 per cent for geese eight to nineteen weeks old. Tadle *et al.* (4) obtained 22 per cent cooking loss for broilers using the same techniques and calculations as used in these studies on geese. The fat loss in cooking the broilers was only 0.9 per cent while it varied from 2.8 to 9.5 per cent in the geese.

The per cent edible meat is shown in Table 3. It amounted to 39 per cent of the eviscerated weight, exclusive of giblets and neck in the eight- to ten-week-old geese, 42 per cent in the ten- to twelve-week-old birds, and also 42 per cent in the twenty-four-week-old birds. Snyder and Orr (2) obtained a range in percentage edible meat from 44.8 in nineteen-week-old geese to 51.1 in twelve-week-old geese. This is a considerably higher percentage than obtained in this study. Snyder and Orr may have included the giblets and fat in their calculations while we did not. Tadle *et al.* (4) reported 51.4 per cent edible meat in broilers, using the same techniques and calculations used in these studies with geese.

The cooked goose carcasses, exclusive of giblets and necks, contained 64 per cent edible meat and 36 per cent bone. Snyder and Orr (2) obtained 68 per cent and Tadle *et al.* (4) 69 per cent edible meat in the cooked carcasses of broilers, using the same techniques and calculations as used in these studies.

Summary

The dressing loss for fifty-two, 7- to 13-lb. live weight geese, eight to twenty-four weeks old averaged 13.3 per cent. The loss was about equally distributed between blood and feathers. The evisceration loss, based on live weight of the geese, averaged 28.5 per cent.

The percentage of cut-up parts of eviscerated ten- to twelve-week-old geese were: breast, 23.7; legs and thighs, 21.9; back, 21.3; wings, 16.0; neck, 6.3; gizzard, 6.3; liver, 3.5; and heart, 0.9.

The cooking loss of the goose carcasses, exclusive of giblets and neck, averaged 35 per cent. It was 33 per cent in eight- to twelve-week-old geese and 38 per cent in twenty-four-week-old birds. Fat constituted about 3 per cent of the loss in eight- to ten-week-old geese, 8 per cent in ten- to twelve-week-old geese, and 9 per cent in the twenty-four-week-old birds.

The percentage edible meat, based on the raw carcass weight exclusive of giblets and neck, was 39 per cent in the eight- to ten-week-old geese and 42 per cent in those ten to twelve and twenty-four weeks old.

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British, Australian, and United States Standard Measures

Did you know that basic measures in Great Britain, Australia, and the United States were different? Here are the standards of the three countries:

	Great Britain	Australia	United States
Pint	20 Imperial fluid oz.*	20 Imperial fluid oz.	16 U.S. fluid oz.*
Cup	½ Imperial pt.	⅖ Imperial pt.	½ U.S. pt.
	10 fl. oz.	8 fl. oz.	8 fl. oz.
Tablespoon	⅜ fl. oz.	½ fl. oz.	½ fl. oz.
	3 tsp.	4 tsp.	3 tsp.
	5 fl. drams	4 fl. drams	4 fl. drams
Teaspoon	5/24 fl. oz.	⅛ fl. oz.	⅙ fl. oz.
	⅓ Tbsp.	¼ Tbsp.	⅓ Tbsp.
		1 fl. dram	

* Imperial fluid oz. 28.4 ml.; U.S. fluid oz. 29.6 ml. This difference is so small that for practical cookery purposes it can usually be ignored.

If occasion arises for the translation of an Australian or British recipe for use in the U.S., it will be noted that adjustments in quantities may be in order, i.e., quantities given in pints will need to be increased by 25 per cent, since 5 U.S. pt. are needed to equal 4 Imperial pt. Cup and tablespoon measurements, may also need to be altered.—*From Food and Nutrition Notes and Reviews (Australia) 12: 68, 1955.*

Why are some people less well fed than might be wished? Is one possible reason that the homemaker does not know what constitutes an adequate diet? This paper describes a study of homemakers in two cities of Upstate New York

What the Homemaker Knows about Nutrition

I. Description of Studies in Rochester and Syracuse, New York[1]

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WHY ARE some people less well fed than might be wished? In poor economic times, insufficient income is the explanation most often offered. Over the past eight years nutritional status and dietary studies in New York State (1–5) have shown that, although the populations studied were in general well-nourished, exceptions appeared in individual families and individuals within families who were not as well fed as might be desired. Dietary weaknesses in relation to Recommended Dietary Allowances (6) were greatest with respect to calcium, ascorbic acid, and vitamin A value. Also, ascorbic acid and vitamin A were suboptimal in the micro-chemical study of nutrient levels in the blood. Roughly 10 to 20 per cent of the individuals studied had blood serum levels of ascorbic acid less than 0.6 mg. per 100 ml. A level somewhat lower than this does not suggest deficiency but may indicate decreased reserves. A similar proportion of individuals had vitamin A levels in the blood serum below 30 mcg. per 100 ml. No similar blood method for use in surveys was available for calcium. Under the economic circumstances of the past ten years, the dietary and nutritional weaknesses were not found to be related to income (7). This was also true for a group of older workers studied in 1953 (8).

What, then, accounts for these lower-than-desirable dietary intakes? Is one possible explanation related to the homemaker's knowledge of what constitutes an adequate diet? Since the Groton survey (1) indicated that over half of the homemakers reported never having had instruction of any kind in this area, the authors undertook a study of the nutritional knowledge and practices of homemakers in two Upstate New York cities, Rochester and Syracuse.

A similar study in July 1947, of 400 homemakers in the metropolitan area of Richmond, Virginia, was reported by the Bureau of Agricultural Economics, U. S. Department of Agriculture (9). More recently (1951), the Virginia Agricultural Extension Service has reported (10) a study of nutrition information and food production and conservation practices of rural homemakers in Appomattox County, Virginia. As part of a large community organization study in four small rural areas in New York State, Abell (11) obtained considerable data in 1948–49 on the homemaker's knowledge and practices in regard to food and nutrition.

The present study is the first reported for northern urban communities. It was designed to be descriptive with regard to the following information:

(a) The homemaker's knowledge of food and nutrition as applied to feeding her family; (b) the relationship between her nutritional knowledge and actual practices in feeding her family; (c) the problems of these urban homemakers in planning, buying, or preparing food for their families and some of the possible means for helping with the problems; (d) the sources from which the homemaker believed she received her nutritional information; and (e) certain habits with regard to shopping, meal planning, food expenditure, and eating. The information obtained has proved of considerable interest to nutritional educators, including public health

[1] This research was supported in part by an appropriation from the State of New York through the State University. Received for publication September 15, 1955.

[2] The authors wish to express their appreciation to all of the homemakers and the agencies whose cooperation made this study possible, and especially to Professor P. J. McCarthy of the Statistics Center, Cornell University, for the selection of the sample.

TABLE 1

Disposition of sample

DISPOSITION	ROCHESTER		SYRACUSE	
	Number of dwellings	Per cent	Number of dwellings	Per cent
Interviews completed	331	62.3	315	63.4
Interviews refused	76	14.3	58	11.7
Single-person dwellings	62	11.7	54	10.9
"Not at home"	62	11.7	70	14.0
Total sample	531	100.0	497	100.0

workers, extension personnel, teachers and school lunch managers, nutritionists, and dietitians. It will be presented in a series of reports related to the individual objectives. This paper describes the study, the methods used, and the adequacy of the sample.

Methods

The study was conducted simultaneously in both Rochester and Syracuse, New York, during October and early November, 1953. Data were gathered by means of personal interviews between a trained interviewer and the homemaker. A homemaker was defined as the person responsible for the planning of food for the family. A pre-tested, open-end type of questionnaire consisting of ninety-six questions was used. Interviews lasted, on the average, 1 hr. Answers were recorded as nearly as possible in the respondent's own words.

Sampling

Sample blocks were selected with probability proportionate to size by use of the 1950 U. S. Census of Housing Block Statistics (12, 13) to give a representative cross section of homemakers within the city limits of Rochester and Syracuse. All dwelling units within each sample block were pre-listed by interviewers in systematic order. A dwelling unit was defined as a room or group of rooms with kitchen facilities forming separate living quarters and which might be occupied by one family or only unrelated persons. Institutional units were not included. Block listings were returned to the central office where units to be interviewed were selected, according to a scheduled sampling interval starting with a randomly selected number. No single-person dwellings were included in completed interviews. Before a unit was listed in the "not at home" category, three calls were made, at least one of which was in the evening.

Cooperation Obtained

Completed interviews in Rochester numbered 331; in Syracuse, 315, or approximately 63 per cent of the sample in each city (Table 1). In Rochester, interviews were refused in 14.3 per cent of the units, in Syracuse, 11.7 per cent. Single-person dwellings and "not at homes" accounted for the remainder of the sample. Percentages in each category were remarkably similar in both cities.

The most frequent reasons for refusal were "not interested" or "too busy," but also included were serious illness in the families, recent deaths, inability to speak English, apparent mental incompetency, and refusal to answer the door.

TABLE 2

Educational attainment of homemakers

EDUCATIONAL LEVEL	PERCENTAGE OF HOMEMAKERS			
	Rochester		Syracuse	
	Sample	Census*	Sample	Census*
Eighth grade or less	33.0	43.2	22.6	37.8
High school, 0 to 3 years	29.6	19.8	18.7	18.9
High school graduate	24.8	23.5	40.3	26.7
Some college	6.9	5.4	9.5	7.3
College graduate	3.9	4.9	7.6	7.1
No answer	1.8	3.2	1.3	2.2
Median school years	10.0	9.8	12.0	10.8

* 1950 Census, females 25 years and over (14).

TABLE 3

Relation of age of homemaker and educational levels

EDUCATIONAL LEVEL OF HOMEMAKER	PERCENTAGE OF HOMEMAKERS					
	Rochester			Syracuse		
	Young	Middle	Old	Young	Middle	Old
8th grade or less	12	38	67	8	23	58
Some high school	36	32	13	18	28	6
High school graduate or more	51	29	16	72	49	34
Unknown	1	1	4	2	—	2

Description and Validation of Sample

Adequacy of the samples for representation of the homemakers in the two cities was judged by comparisons with data for "urban place" Rochester and Syracuse as revealed in the 1950 Census (14).

Age of Homemakers

Homemakers were divided into three groups according to age as estimated by the interviewer: "young," under 40 years of age; "middle-age," 40 to 60 years; and "old," those over 60. In both cities, approximately half fell in the "young" group, one-third in the "middle-age" group, and one-fifth in the "old" category.

Educational Attainment of Homemaker

Table 2 presents a comparison of the level of formal educational attainment of the homemakers in the samples and in the respective censuses. As was true in the Census, the homemakers in Syracuse had more years of formal education than those in Rochester. The Rochester sample differed from the Census in that about 10 per cent more homemakers

had some high school education. However, the 35.6 per cent who were high school graduates or more was close to the 33.8 per cent which the Census revealed. In the Syracuse sample, about 15 per cent more of the homemakers were high school graduates than was true for the population as revealed by the Census.

Relation Between Age and Educational Attainment

A strong relationship existed between age and educational attainment of the homemaker (Table 3). A much higher percentage of the young homemakers had completed high school or more than was true for the middle-age group, who in turn had a higher level of formal education than did the old homemakers. This proved to be an important relationship in terms of the data to be presented in subsequent reports.

Income Level

In both cities, a lower percentage of families in the sample appeared in the lower income brackets than was true for the population as revealed by the Census (Table 4). The median income was also higher. However, two facts should be borne in mind: first, that the general income level was lower in 1949 than in 1953; second, that in 20 per cent of the families in each sample, data on income could not be obtained.

Table 5 gives the relationship between income level of the family and the educational level of the homemaker. It will be noted that the two were strongly related; in general, at higher income levels, a higher percentage of homemakers were in the upper educational brackets. In Rochester, the largest proportion of the sample for whom income was unknown was at the lower educational level. The reverse was true in Syracuse. One might assume then that the unknown group would probably have lowered the income level of the sample in Rochester and have raised it in Syracuse.

TABLE 4

Income level of the family

INCOME LEVEL	PERCENTAGE OF FAMILIES			
	Rochester		Syracuse	
	Sample	Census*	Sample	Census*
Less than $2000	5.1	16.1	4.8	17.5
$2000–2499	2.7	7.4	2.9	8.3
$2500–2999	4.5	9.4	8.6	10.0
$3000–3499	8.2	12.7	8.3	11.8
$3500–3999	10.3	9.4	11.1	8.9
$4000–4499	11.8	8.5	10.2	8.1
$4500–4999	11.2	6.1	9.1	6.1
$5000–5999	10.3	10.0	11.4	9.4
$6000–6999	10.0	5.5	6.7	4.8
$7000–9999	4.8	5.6	4.4	5.8
$10,000 and over	0.9	2.8	3.2	3.1
Unknown	20.2	6.5	19.3	6.2
Median income	$4000–4499	$3561	$4000–4499	$3471

* 1949 urban place income for families.

Occupation of Male Head of Household

The occupational categories used in the study were not the same as those of the Census. However, a fairly good comparison may be made. The "retired" and "unemployed" groups of our sample probably constitute the "unemployed" Census category (Table 6).

In the major occupational categories, there was remarkably good agreement between our sample and the Census in both cities. There was a smaller percentage of "unskilled workers" in the sample in both cities, but also a smaller percentage of the "manager; proprietor" category.

Residential History of Homemakers

The percentage of foreign-born homemakers in our samples was compared with the percentage of female foreign-born whites as given in the Census. In Rochester, 16.0 per cent in the sample were so classified as compared with 14.1 per cent in the Census; in Syracuse, 11.1 per cent as compared with 10.2 per cent. Slightly more of the husbands were foreign-born than the homemakers. Italy and Greece contributed the greatest number of foreign-born in both cities, followed by Russia and Hungary.

Sixty per cent of the Syracuse homemakers had lived in that city over twenty years; 75 per cent over ten years; only 2 per cent less than a year. In Rochester, 75 per cent of the homemakers had lived there over twenty years; 83 per cent over ten years, and only 2 per cent less than one year.

TABLE 5

Relation of homemakers' education to family income

EDUCATIONAL LEVEL OF HOMEMAKER	PERCENTAGE OF HOMEMAKERS							
	Rochester				Syracuse			
	Under $3500	$3500–4999	$5000 and over	Unknown	Under $3500	$3500–4999	$5000 and over	Unknown
8th grade or less	44	22	15	63	35	21	9	28
Some high school	44	32	28	13	22	20	20	12
High school graduate or more	12	45	54	21	43	57	70	59
Unknown	—	1	3	3	—	2	1	1

TABLE 6

Occupation of head of household

OCCUPATIONAL GROUP	PERCENTAGE OF POPULATION			
	Rochester		Syracuse	
	Sample	Census	Sample	Census
Unskilled worker	1.9	5.3	1.9	5.7
Semi-skilled, operative	30.5	31.5*	22.9	27.8*
Skilled	27.2	23.2†	24.4	20.0†
White collar	13.3	14.6‡	15.6	17.3‡
Professional	7.8	8.7	12.4	10.2
Manager, proprietor	4.6	9.5	5.4	11.9
Retired	4.6	—	6.3	—
Unemployed	0.6	6.1	1.3	6.5
Man not head of household	4.9	—	9.5	—
No answer	4.6	1.1	0.3	0.6

* Operatives; service; household workers.

† Craftsmen, foreman, and so on.

‡ Clerical and sales workers

Population per Household

The average population per household in both cities was slightly higher than the Census figures: in Rochester, 3.8 persons compared to a Census value of 3.2; in Syracuse, 3.7 in contrast to 3.2. Of course, it should be remembered that our samples included no single person households, whereas the Census did. Differences may well be accounted for by this factor.

In the sample from both cities, approximately 40 per cent of the homes were without children; 20 per cent had one child; 20 per cent two; and the remaining 10 per cent was divided largely between three- and four-children households. There were a few households with up to nine children.

Other papers in this series will cover: (a) the homemaker's knowledge of nutrition; (b) the homemaker's practices in feeding her family and their relationship to her nutritional knowledge; and (c) food problems of the homemaker, her shopping habits and sources of information. The descriptive material will be related to the age, educational attainment of the homemaker, the family income, and to whether the homemaker has ever studied about what to feed her family.

Summary

A study of the nutritional knowledge and practices of representative cross sections of homemakers in Rochester and Syracuse, New York, was undertaken in the fall of 1953. The plan of the study and the characteristics of the sample of 331 Rochester and 315 Syracuse households are described.

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Grocery Shopping in the Future

"Two lb. sirloin, atomically radiated, please," the housewife may ask her butcher in the future.

"Do you want it dehydrofroze or the plain infra-red prepared?" he might answer, according to Frank M. Atchley, agricultural consultant, Grocery Manufacturers Association of America, who spoke before the eighth annual convention of the National Farm Home Editors recently.

Mr. Atchley also predicted that we may in the future eat frozen fruit treated with liquid nitrogen.—*From Food Field Reporter, November 14, 1955, page 88.*

This survey of homemakers indicates that only about a quarter have even a fair understanding of nutrition related to feeding their families. The greatest need for more nutritional knowledge by homemakers is in regard to: ascorbic-acid-rich and carotene-rich fruits and vegetables; the adult need for milk; and the nutritional value of breads and cereals, and of butter and fortified margarine.

What the Homemaker Knows about Nutrition

II. Level of Nutritional Knowledge[1]

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OVER the past twenty years particularly, there has been an intense interest in the science of nutrition and in the application of its findings to the better nutriture of mankind. This application ultimately comes by the avenue of the family meals. The person who, to a large extent, controls what goes into these meals is the homemaker. What does she know about food and nutrition as related to feeding her family? How much has she absorbed of the information with which she has been bombarded through various channels? These questions surely must concern nutritional educators, be they public health workers, teachers, extension workers, school lunch managers, or dietitians. To find answers, a study was undertaken in the fall of 1953 in two Upstate New York urban communities, Rochester and Syracuse, of the nutritional knowledge and practices of representative homemakers.

The present report is devoted to: (a) what the homemaker knows about food and nutrition as applied to feeding her family and (b) to the relation of her nutritional knowledge to certain socio-economic factors, namely her age, formal education, previous study of what to feed her family, and the family income. Comparison will also be made with the findings from previous studies in urban and rural Virginia (1, 2) and in rural New York State (3).

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Method

General methodology and details of sampling have been given elsewhere (4). In brief, on the basis of Census block statistics, representative cross sections of households in "urban place" Rochester and Syracuse were drawn. The Rochester sample included 331 households (and homemakers); the Syracuse, 315. An open-end-question type of questionnaire composed of ninety-six items was completed by means of personal interviews between the homemaker and a trained interviewer. The average length of interview was 1 hr.

Questions used as a basis for ascertaining nutritional knowledge were related to:

(a) What should be included in meals for the family each day and why?

(b) What did the term "balanced diet" mean to the homemaker?

(c) Did the homemaker know what is meant by the term "Basic 7"; could she name any of the groups?

(d) Did the homemaker serve any "good for you" foods, "child" foods, or "husband" foods—and why was each "good for you" or "necessary for the child," and so on?

(e) How often did the homemaker think certain basic foods should be used?

(f) How much knowledge did the homemaker have of foods of similar food value which could be used in place of certain basic foods?

Answers to these questions were tabulated in relation to certain identification data.

What Should Be Included in Family Meals?

Replies to the question of what should be included in the family meals each day were tabulated according to the mention of each of seven basic food

TABLE 1

What should be included in family meals?

FOOD GROUP	PERCENTAGE OF HOMEMAKERS			
	Mention		Correct reason	
	Rochester	Syracuse	Rochester	Syracuse
Meat, fish, poultry	97	96	36	50
Potato, other fruits and vegetables	96	95	34	46
Milk, cheese, ice cream	68	58	31	32
Bread, flour, cereals	55	52	16	19
Leafy, green or yellow vegetables	13	17	7	10
Butter or fortified margarine	12	13	4	4
Citrus fruit, tomatoes, cabbage	9	9	3	6

groups. Table 1 records the percentage of homemakers in the sample from each city who mentioned each food group as needing to be included and the percentage who gave a correct reason for including it.

Conventional food pattern items, such as meat or meat substitutes and potatoes or other fruits and vegetables, were mentioned by practically all homemakers in both cities; milk and milk products by about two-thirds; bread and cereals by slightly over half. Foods where some knowledge of nutrition was necessary to realize they should be included in meals, such as leafy, green and yellow vegetables or the ascorbic-acid-rich fruits were mentioned by only about 15 or 10 per cent, respectively.

At best, only one-third to one-half of the homemakers could give an adequate reason related to nutrition for including any of the food groups mentioned. Reasons for the meat and potatoes-or-other-fruits-and-vegetable groups were best known, with milk products a close third. Of the foods less commonly mentioned, an even lower percentage of homemakers knew any reason for serving them.

Obviously, the greatest need for more nutritional knowledge by homemakers, both in terms of the need to serve certain foods and in understanding the reason for inclusion, is in the following areas: the ascorbic-acid-rich fruits and vegetables, the carotene-rich fruits and vegetables, bread and cereals and butter or fortified margarine, and use of milk by adults. A much higher percentage of Abell's (3) rural New York State homemakers mentioned the inclusion of these groups than was true for this urban sample. The greater knowledge of the rural group was also evidenced by the percentage of homemakers who mentioned various numbers of the seven basic groups (Table 2).

Assessment of Nutritional Knowledge

A general assessment of the level of nutritional knowledge of the homemaker was based on the number of food groups for which she could give a

TABLE 2

Food groups mentioned to be included in meals

NUMBER OF FOOD GROUPS MENTIONED	PERCENTAGE OF HOMEMAKERS		PERCENTAGE OF HOMEMAKERS IN ABELL STUDY (3)	
	Rochester	Syracuse	Rural 1	Rural 2
Seven	0	0.6	17.0	8.4
Six	3.0	2.2	20.0	20.4
Five	13.8	11.4	21.3	21.3
Four	32.6	32.1	24.7	26.8
Three	32.0	30.5	9.5	15.4
Two	18.3	21.9	7.1	7.7
One	0.3	1.3	0.4	—

TABLE 3

Levels of homemakers' nutritional knowledge

LEVEL NUTRITIONAL KNOWLEDGE	PERCENTAGE OF HOMEMAKERS	
	Rochester	Syracuse
None or erroneous	49	34
Some	32	36
"Minimal"	19	30

nutritionally correct reason for including in the family's meals. The correct reason was considered in terms of either a function or a nutrient for which the food group is known. Homemakers who gave a correct reason for three or more of the basic groups were said to have a "minimal" knowledge; those who gave a reason for one or two of the groups were designated as having "some" knowledge. The remainder who gave either no reason, entirely erroneous ones, or non-nutritional, non-specific answers were classified as "none or erroneous."

Twenty to 30 per cent of the homemakers gave evidence of planning their meals on the basis of some real knowledge of the rudiments of nutrition (Table 3), but for one-third to one-half, there was no evidence of any nutritional knowledge. Since the criterion used in defining adequacy of knowledge in the Virginia studies was somewhat different, direct comparisons cannot be made here. However, 69 per cent of the rural (2) and 50 per cent of the urban Virginia homemakers (1) were classified as having little or no information on nutrition.

What Does a Balanced Diet Mean?

Approximately one-fourth of the homemakers defined a "balanced diet" in terms which showed that the phrase had an "educated" meaning to them, i.e. they gave a nutritionally meaningful and adequate definition, such as: "that balance of food which the body needs"; "foods that include everything we need in the right proportions"; "eating a variety of food so the body gets its essential needs"; or they named a combination of foods or nutrients which would represent a balanced diet. Approximately one-fourth of the homemakers (19 per cent in Rochester; 26 per cent in Syracuse) had neither heard of the term "balanced diet" nor made an

TABLE 4

Homemakers' knowledge of correct substitute for basic food

BASIC FOODS	PERCENTAGE OF HOMEMAKERS WITH KNOWLEDGE OF FOOD SUBSTITUTES	
	Rochester	Syracuse
Milk	35	44
Meat, fish, or poultry	61	63
Citrus fruits	28	35

TABLE 5

Ages of homemakers with "minimal" nutritional knowledge

AGE GROUP	PERCENTAGE OF HOMEMAKERS WITH MINIMAL KNOWLEDGE	
	Rochester	Syracuse
Young	28	41
Middle-aged	15	25
Old	8	8
Total of sample	19	30

attempt to define it. The other half had erroneous or non-specific conceptions, such as "not eating too much" or "three meals a day."

Two-thirds to three-fourths of the homemakers said they had never heard of the "Basic 7." Only 10 to 20 per cent had heard of it and were able to name any of its food groups. The remaining homemakers who said they had heard of the Basic 7 either could not name any of the groups or responded by naming nutrients and hence were not really familiar with the scheme.

"Person" Foods

In response to questions concerning whether homemakers served any foods just because they were "good for you," about 40 per cent (Rochester, 44; Syracuse, 37) answered "yes." Of these, 42 to 47 per cent could give correct reasons for doing so. (This would represent correct knowledge on the part of about 20 per cent of the total sample.) The foods most commonly served as "good for you" were overwhelmingly vegetables. These were named by 25 to 30 per cent of the homemakers. About 10 per cent mentioned organ meats; 5 to 7 per cent, milk; 5 per cent, fruits; and 4 to 5 per cent, meat and eggs.

Twenty-nine per cent of the Syracuse homemakers and 40 per cent of those in the Rochester sample said they served some food "just because of the children." Of these, 23 to 27 per cent could give a nutritionally correct reason for doing so. Here, as in other parts of the study, there was ample evidence that milk is served by a substantial number of homemakers as a child's food only. Twenty-five per cent served milk "just because of the children"; vegetables were next on the list, being named by 13 per cent; cereals, by 8 per cent; and then fruit, meat, eggs, and organ meats by very small percentages.

The question of foods served "just because of your husband" had less nutritional significance. One-third said they did serve such foods; by far the greatest percentage (20) mentioned meat, fish, poultry, or eggs; small percentages (3 to 5) mentioned potatoes, desserts, breads or cereals, and cheese.

TABLE 6

Education of homemakers with "minimal" nutritional knowledge

EDUCATIONAL LEVEL	PERCENTAGE OF HOMEMAKERS WITH MINIMAL KNOWLEDGE	
	Rochester	Syracuse
8th grade or less	10	11
Some high school	19	25
High school graduate or more	28	39

Possible Substitutes for Basic Foods

Nutritional knowledge also was examined by determining whether a homemaker could name foods with some of the same food values to substitute for basic foods (Table 4).

About one-third knew possible substitutes for citrus fruits; slightly more named partial substitutes for milk; and about two-thirds knew meat, fish, or poultry substitutes. It is interesting that these food groups, by this measure of knowledge, maintain the same relative position with respect to each other in the adequacy of the homemaker's knowledge.

Other Measures of Knowledge

Other questions asked to determine the homemaker's knowledge proved less enlightening. One series of questions related to how often certain basic foods should be served to the family; often the homemaker responded in the most obvious terms—once a day. About 85 per cent answered thus for meat, fish, and poultry, with an additional 7 per cent suggesting twice a day. A similar percentage said citrus fruits should be served once a day, though about 15 per cent felt less often was sufficient. Most homemakers (75 to 80 per cent) felt children needed 4 cups milk per day; with 85 to 90 per cent indicating 3 or 4 cups. In Rochester, a higher percentage of homemakers thought adults needed milk and in larger quantities than was true in Syracuse, where 11 per cent felt that adults need no milk; 12 per cent said only 1 cup; and 57 per cent, 2 cups.

It appeared that the nutritional value of cereals and breadstuffs may not yet have occupied the attention of homemakers to any appreciable degree. They responded to the question of whether there was any special reason to use bread every day almost entirely in non-nutritional terms, such as "habit," "filling," "to make sandwiches." Only 10 per cent replied in any way related to nutrition or food value and then usually in very non-specific terms. The same was true for the use of butter or fortified margarine, though about one-fourth did say it contained fat. Only 3 to 5 per cent mentioned the

TABLE 7

Knowledge of correct substitutes and educational attainment

EDUCATIONAL LEVEL	PERCENTAGE OF HOMEMAKERS WITH KNOWLEDGE OF FOOD SUBSTITUTES					
	Rochester			Syracuse		
	Milk	Meat, fish, poultry	Citrus fruit	Milk	Meat, fish, poultry	Citrus fruit
8th grade or less	25	51	15	32	44	17
Some high school	36	62	27	42	63	34
High school graduate or more	43	70	44	49	71	42

vitamin A content. When asked what green or yellow vegetables the homemaker used, approximately 70 per cent responded in terms of true leafy, green or yellow vegetables. However, about 65 per cent included lettuce, 25 per cent corn, 28 per cent wax beans, and 10 to 15 per cent cauliflower and turnips as members of this food group.

Age, Education, and Nutritional Knowledge

The first factor related to the apparent nutritional knowledge of the homemaker was her age level. By every means used to estimate her knowledge of nutrition, in both Rochester and Syracuse, it was found that the young homemaker knew considerably more than the middle-aged homemaker, who, in turn knew considerably more than the old homemaker. Table 5 gives the percentage of homemakers at each age level who were assessed as having "minimal" knowledge of nutrition.

To examine the relationship between educational attainment and nutritional knowledge, homemakers in each city were divided into three general groups: those who completed eight grades or less; those with some high school; and those whose schooling extended to at least high school graduation. The level of formal education and the nutritional knowledge were definitely and directly related, regardless of which of the measures of knowledge was used (Tables 6, 7). The higher the educational attainment, the greater was the percentage of homemakers: (a) with a "minimal" knowledge of nutrition; (b) with a satisfactory reason for the inclusion of any food group; or (c) who could name a possible nutritional substitute for certain foods.

In an earlier report (4), a strong relationship was demonstrated between the age and the educational level of the homemaker. This led the authors to believe that educational level was the important factor related to nutritional knowledge and that the age relationship merely reflects the influence of higher educational level.

Income and Nutritional Knowledge

We found no consistent pattern in the relationship between family income and nutritional knowledge. The percentage of homemakers with "minimal" knowledge of nutrition or with a satisfactory definition of a "balanced diet" did not increase consistently with higher income (Table 8).

TABLE 8

Income and knowledge of nutrition

INCOME LEVEL	PERCENTAGE OF HOMEMAKERS	
	Rochester	Syracuse
"Minimal" Knowledge of Nutrition		
Under $3500	16	17
$3500–4999	25	42
$5000 and over	20	37
Unknown	10	16
Satisfactory Definition of "Balanced Diet"		
Under $3500	16	22
$3500–4999	26	25
$5000 and over	21	27
Unknown	23	26

Greatest differences were found in the extremes of income, for example, under $2500 and over $7000, with a higher percentage of homemakers in the highest income bracket in general having the greatest knowledge of nutrition. However, even for the extremes, the pattern of greatest knowledge at the highest income level was not consistent for all measures of knowledge.

In both cities a strong relationship existing between family income and educational level of the homemaker was shown earlier (4). In the lower income brackets, there was definitely a higher percentage of homemakers with an eighth grade education or less in contrast to a greater percentage of homemakers with incomes of $5000 or more who were at least high school graduates. This picture was even more marked in the extreme income groups (only 4 per cent were high school graduates at an income under $2500, 69 per cent, at incomes over $7000). Hence any apparent relationship with nutritional knowledge is more probably the indirect result of educational influences.

Furthermore, when income and educational influences are segregated by two-way tabulation for any given measure of nutritional knowledge, education is shown to be the important factor. The effect of increased income within a given educational level is, in general, of a lesser magnitude and less consistent (Table 9).

Effect of Having Studied Foods

The authors were interested in whether the homemaker, in her estimation, felt she had ever "studied about what to eat" and where she had done such a study. Thirty-five to 40 per cent reported having studied. Formal schooling was reported by far the greater majority in the samples from both cities, 77 and 80 per cent. Only very small percentages reported study under other circumstances, such as Red Cross classes, Home Bureau, cooking

TABLE 9

Homemakers giving satisfactory definition of a balanced diet in various income and educational groups

INCOME LEVEL	PERCENTAGE OF HOMEMAKERS WITH KNOWLEDGE OF A "BALANCED DIET"					
	Rochester			Syracuse		
	8th grade or less	Some high school	High school graduate or more	8th grade or less	Some high school	High school graduate or more
Under $3500	7	17	50	15	29	24
$3500–4999	17	29	28	10	26	29
$5000 and over	14	17	26	—	19	32
Unknown	12	33	43	6	29	36

schools, and so on. There was remarkable similarity of responses in the two cities. In Syracuse, the slightly higher proportion of homemakers who had studied probably was related to the generally somewhat higher level of educational attainment.

Did such special study have any measurable effect on the apparent level of nutritional knowledge of the homemaker? The results of the various measures of nutritional knowledge were compared on a group basis in each city for those homemakers who said they had not studied and for those who had. The results, regardless of which measure was used, were overwhelmingly in favor of the group who had studied. For example, in both cities, twice as high a percentage of homemakers who had "studied what to eat" had "minimal" knowledge of nutrition or gave a satisfactory definition of a balanced diet as was true for those who reported no study (Table 10). This was also true for knowledge as measured by ability to name correct substitutes, although the magnitude of the differences between groups was not as great.

The knowledge of the homemakers who reported studying "what to eat" in schools was compared with those who had studied in other places. Differences were not great and were inconsistent in the two cities. In Rochester, in general, a greater percentage of homemakers who studied in the schools satisfactorily met the various measures than did those studying elsewhere; the reverse was true in Syracuse.

In the Richmond study (1), similar findings were obtained. Most homemakers with some information on nutrition were found in one or more of the following groups: white, forty-four years of age and under, in the middle and upper income groups, or with a high school or college education. Most homemakers with little or no information on nutrition were over forty-four years of age, in the lower or middle income groups, with grammar school education. Also homemakers who had taken food courses in school seemed to have more knowledge of nutrition than those who had not. Incidentally, as in our study, approximately one-third had studied nutrition or cooking in school and more of these

TABLE 10

Effect of having "studied what to eat"

MEASURE OF KNOWLEDGE	PERCENTAGE OF HOMEMAKERS			
	Rochester		Syracuse	
	Not studied	Studied	Not studied	Studied
"Minimal" knowledge	14	29	20	44
Defined balanced diet	17	31	18	36

homemakers were found in the younger and better educated groups.

Summary

From responses to questions relating to nutritional knowledge, approximately one quarter of the homemakers studied in Rochester and Syracuse, New York, appeared to have a fair understanding of nutrition as related to the feeding of their families.

The evidence indicates that they knew more about nutritional values of meat, fish, and poultry, of potatoes, of other fruits and vegetables than about other items in the diet. They do not discriminate between values in different kinds of fruits and vegetables.

The greatest need for more nutritional knowledge by homemakers is in regard to: ascorbic-acid-rich fruits and vegetables; carotene-rich fruits and vegetables; adult need for milk; nutritional value of breadstuffs and cereals and of butter and fortified margarine.

Nutritional knowledge was greatest in the younger, better educated, higher income homemakers. However, of the factors studied, formal educational attainment seemed the most important single factor related to knowledge of nutrition.

The homemakers who reported having "studied about what to eat" had a better knowledge of nutrition by any of the criteria used than those who reported they had not. Schools appear to be an important factor in teaching nutrition, since by far the majority of homemakers reported it as the place they "studied about what to eat."

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Metabolic Derangements in Burns[1]

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TRAUMA, whether resulting from an accident, such as a burn or fracture, or from an elective surgical procedure, is followed by an immediate catabolic response. This response is characterized by a high excretion rate of nitrogen and of other intracellular constituents. Its duration and intensity in a previously normal individual vary from a few days following minor surgery to about six weeks following a fracture or a burn.

The studies on which this report is based were undertaken to obtain: (a) an over-all survey of the metabolic response to the burn injury and (b) a background of information and experience for more specific studies.

Methods

The patients had all been well-nourished, physically active normal young men on duty with the armed services at the time of their injury. Studies were conducted from the time of burning until complete healing. The usual balance techniques were followed. Food intake was *ad libitum*. All intake, except the intravenous fluids, was analyzed. Urine, feces, exudate, and emesis were collected and analyzed. Balances of nitrogen, potassium, phosphorus, calcium, magnesium, sodium, and chloride were determined.

For the purpose of presentation, the balance data are divided into the following time periods: post-burn days 0–2, the early acute phase; post-burn days 3–9, the period of fluid redistribution; and 10-day periods thereafter. The elements are charted in the approximate ratios in which they occur in protoplasm. The ratio of potassium to nitrogen is 3.0 mEq.:1 gm. nitrogen. Phosphorus is shown as 1 gm. per 15 gm. nitrogen. Calcium and phosphorus are plotted in the ratio in which they occur in bone: 2 gm. calcium per gram phosphorus. Since phosphorus may be lost or stored with calcium in the skeletal system, the protoplasm phosphorus balance is obtained by visually subtracting the calcium balance from the phosphorus balance in an algebraic manner. Magnesium is plotted in the protoplasmic ratio of 7 mg. magnesium per gram nitrogen. Intake is plotted up from the zero line, output down from the intake line. Black areas below the zero line represent negative balance and above it positive balance. Cross-hatched areas are the exudate contributions to the output.

In discussing the data, the period of negative nitrogen balance is referred to as the catabolic phase and the period of positive nitrogen balance is referred to as the anabolic phase.

Results

Patient # 1

This patient was a thirty-two-year-old male who received second degree burns of 70 per cent of the body surface. The nitrogen balance illustrates the typical response to the injury (*Fig.* 1). The balance became strongly negative immediately following the injury. There were early fluctuations in the urinary nitrogen excretion, which reached a maximum of 36 gm. on the twelth post-burn day. During the first ten days, the exudate accounted for a nitrogen output of nearly 7 gm. per day, a startlingly large amount.

The catabolic phase lasted for twenty-eight days. At its termination, the wounds were essentially healed. The replacement of nitrogen proceeded at the unusually rapid rate of 20 gm. per day on an average daily intake of 30 gm. During the catabolic phase, there was a net loss of 390 gm. nitrogen. All of these losses were replaced during the part of the anabolic phase that was observed.

Throughout the first period, the potassium and nitrogen balances reflected the protoplasmic ratio. During Period 2, the potassium intake was increased to 155 mEq. per day. The potassium balance became positive, while the negativity of the nitrogen balance decreased only minimally. From post-burn Day 10 to the end of the study, both elements were lost or stored in approximately the expected ratios. The exudate potassium varied, and in the early post-burn phase showed no particular pattern of relationship in its magnitude with respect to nitrogen.

[1] Presented at the 38th Annual Meeting of The American Dietetic Association in St. Louis, on October 21, 1955.

[2] Present address: University City, Missouri.

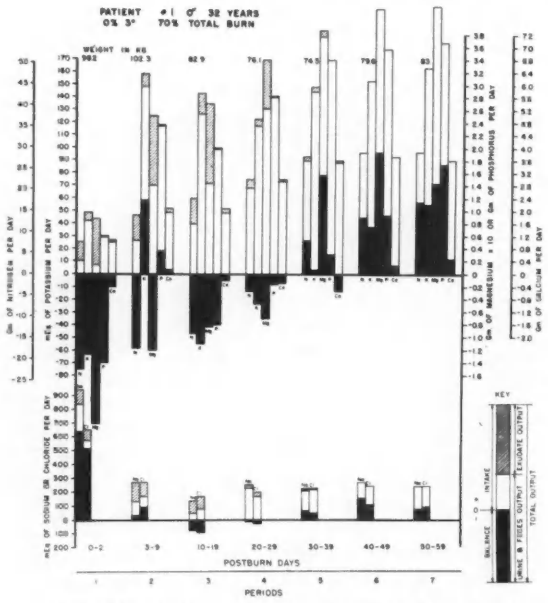

Fig. 1. Metabolic correlation chart for Patient No. 1. Reprinted by permission from *Journal of Clinical Investigation*.

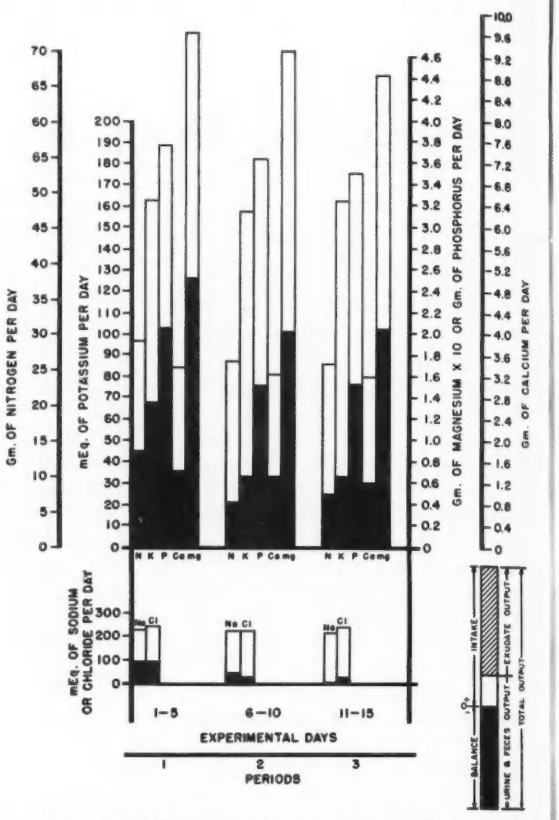

Fig. 2. Metabolic correlation chart of Patient No. 1, seventy-five days after complete healing.

In Period 1, the phosphorus balance corrected for calcium was in good agreement with the nitrogen balance. During the second period, the phosphorus balance became positive and agreed with the potassium balance in the pattern of retention, despite persistent strongly negative nitrogen balance. After Day 10, all three of the elements were lost or stored in the approximate protoplasmic ratios.

The magnesium balance did not follow a consistent pattern. It agreed well with the nitrogen balance in the second period, when potassium and phosphorus were being retained, and also in the third period. For the rest of the study, the magnesium balance was either more negative or more positive than the nitrogen balance, except for the last period when agreement was again good. The exudate losses of magnesium were highly variable.

During the first few days following the burn, sodium and chloride retention were always observed as a result of both the early fluid and electrolyte therapy and the decreased excretion of these ions. Negative sodium balance was the usual pattern during Period 2, but sodium excretion was much delayed in this patient. The apparent positive sodium and chloride balances in the latter part of the study reflect a large unmeasured loss of these ions in the perspiration. This patient was studied in the summer months. He could not tolerate air-conditioning and perspired profusely.

Seventy-five days after healing was complete, this patient was again studied for fifteen more days (*Fig.* 2). At that late time, he was still retaining an average of about 10 gm. nitrogen per day on an average daily intake of 27 gm. The balances of all of the other elements were commensurately positive.

During the catabolic phase, the cumulative negative nitrogen and negative potassium balances were 390 gm. and 830 mEq., respectively (Table 1). Theoretically, on the basis of the potassium balance, 277 gm. nitrogen should have been lost. The actual nitrogen loss was 113 gm. in excess of this amount. The potassium:nitrogen ratio of the catabolized tissue was 2.1 mEq. per gram instead of 3.0 mEq. per gram, which would be expected to result from protoplasm catabolism.

Similar reasoning with respect to phosphorus balance indicates that the loss of 232 gm. nitrogen could not be accounted for by the phosphorus balance corrected for calcium. The phosphorus: nitrogen ratio of the catabolized tissue was 1:37 rather than the expected ratio of 1:15.

During the anabolic phase, 415 gm. nitrogen and 1000 mEq. potassium were stored with a ratio of 2.4 mEq. potassium:1 gm. nitrogen. On the basis of the cumulative potassium balance, 333 gm. nitrogen should have been stored, 82 gm. less than were actually retained. Nitrogen was being replaced more rapidly than potassium during this phase of

TABLE 1

Observed and theoretical nitrogen balances of Patient No. 1

MEASUREMENT	CATABOLIC PHASE (28 days)	ANABOLIC PHASE (33 days)	LATE CONVALESCENT PHASE (15 days, 75 days after healing)
Cumulative observed balances			
Nitrogen (gm.)	−390	+415	+136
Potassium (mEq.)	−830	+1000	+680
Phosphorus (gm.)	−13.4	+34.1	+35.8
Calcium (gm.)	−6.4	+3.4	+19.9
Nitrogen balance from potassium (gm.)*	−277	+333	+227
Discrepance from observed†	−113	+82	−91
Potassium:nitrogen ratio	2.1:1	2.4:1	5.0:1
Protoplasm phosphorus (gm.)‡	−10.5	+32.6	+16.9
Nitrogen balance from phosphorus (gm.) ⁂	−158	+489	+254
Discrepance from observed†	−232	−74	−118
Phosphorus:nitrogen ratio	1:37.0	1:13.0	1:8.0

* Potassium balance ÷ 3.

† Observed balance − theoretical balance.

‡ Phosphorus balance − (calcium balance ÷ 2.23).

⁂ Protoplasm phosphorus × 15.

the post-burn course. During the anabolic phase, 74 gm. more of nitrogen should have been retained according to theoretical nitrogen balance calculated from the cumulative phosphorus balance corrected for calcium. The phosphorus:nitrogen ratio was 1:13, which approached the expected ratio of 1:15.

During late convalescence, relative potassium and phosphorus retention were observed. On the basis of the cumulative potassium balance, 227 gm. nitrogen should have been retained, 91 gm. more than were stored. Theoretical nitrogen calculated from the protoplasm phosphorus balance was 118 gm. greater than the measured balance. During this phase, the potassium:nitrogen and phosphorus:nitrogen ratios still deviated from the expected ratios.

The fat changes of this patient were estimated from the cumulative nitrogen balances of the catabolic and anabolic phases (Table 2). Each gram of nitrogen was considered equivalent to 30 gm. protoplasm. The difference between the calculated protoplasm change and the actual weight change was the estimated fat change. The weight loss during the catabolic phase was 15.8 kg. During this time, the patient had lost 390 gm. nitrogen, which represented a loss of 11.7 kg. protoplasm. By difference, there was an estimated fat loss of 4.1 kg. At the end of the study, his weight was still 7 kg. below the pre-burn weight. During that part of the anabolic period observed, 415 gm. nitrogen had been retained, sufficient to have replaced 12.4 kg. protoplasm. However, the weight gain during that time was only 6.6 kg. Apparently, an additional 5.8 kg. fat had been lost while protoplasm was being stored.

TABLE 2

Estimated body fat changes in Patient No. 1

PATIENT	DURATION	NITROGEN BALANCE	WEIGHT CHANGE		
			Theoretical*	Actual	Discrepance
	days	*gm.*	*kg.*	*kg.*	*kg.*
Catabolic	28	−390	−11.7	−15.8	−4.1
Anabolic	33	415	12.4	6.6	−5.8

* Theoretical weight = $\frac{\text{nitrogen balance} \times 30}{1000}$

Composite Patient

The foregoing has illustrated the response of one individual to the burn injury. Not all of our patients have shown the same clear-cut pattern of gradually decreasing negative nitrogen balance or the same remarkable capacity for storing nitrogen. The theoretical balances in many individual study periods of the several patients did not show the same approximation to protoplasmic ratios after post-burn Day 10 as in the patient just presented. However, there were certain consistencies in the pattern of response despite individual differences. To emphasize the pattern of the balances and to minimize the individual differences, the balance data of six severely burned patients have been summarized as average daily intake and balance. The size of the patients varied. Their surface area ranged from 1.7 to 2.2 sq. m., with an average of 2.0 sq. m. To make the data of the individual patients more comparable, they were converted to intake and balances per 2 sq. m., the average surface area.

The step-wise increase of intake from the time of injury until a plateau is reached about post-burn Day 30 is the normal pattern of the intake when it is determined by the appetite of the patient (*Fig.* 3). The nitrogen balance of the "composite" patient was strongly negative immediately following the injury. The degree of negativity decreased gradually until the catabolic phase ended at the thirtieth post-burn day. The exudate nitrogen varied from patient to patient and often constituted as much as one-third of the total output. While the larger burns had greater losses from this source, a strict correlation with the extent and depth of the wound was not observed. These losses decreased as the wound healed.

For the first three post-burn days, the potassium balance was negative and showed the expected protoplasmic relationship with the nitrogen balance. During Period 2, a relative retention of potassium was observed. Following post-burn Day 10, nitrogen and potassium were lost or stored in approximately the same ratios in which they occur in protoplasm.

The phosphorus balance of the first three post-burn days agreed with the nitrogen and potassium balances in both direction and magnitude. During

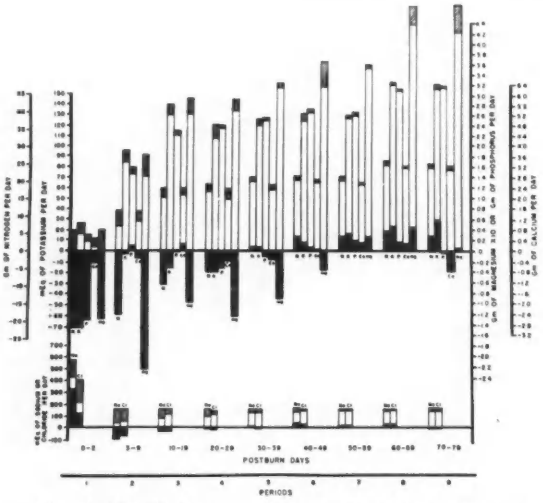

Fig. 3. Metabolic correlation chart for composite patient. Data are the average intake and balances of six patients converted to intake and balances per 2.0 sq. m., their average surface area.

Period 2, phosphorus had the same pattern of relative retention as potassium. After post-burn Day 20, the three balances—nitrogen, potassium, and phosphorus—followed essentially the same pattern and frequently approached the protoplasmic ratios. The calcium balances did not always conform with the phosphorus balances. These balances were in opposite directions during occasional periods.

In the "composite" patient, the magnesium balances agreed in direction with the nitrogen balance during the early periods of the catabolic phase and during the late anabolic phase. The magnesium losses continued after nitrogen storage had begun. Then, for a short time, both elements were retained in the expected ratio. The exudate contributions to the losses were inconsistent and erratic.

Sodium and chloride balances were both strongly positive in the first three post-burn days. During Period 2, most of the patients excreted the sodium load given in the initial therapy, and the sodium and chloride balances became negative. After post-burn Day 10, they were in essential equilibrium throughout the study.

After complete healing, the patients were allowed thirty to forty-five days' leave from the hospital.

The composite data of five patients who were on balance studies following their convalescent leaves showed that they were in positive balance of all of the elements being studied (*Fig.* 4). It is apparent that even from sixty to one hundred days after the wounds were healed, the metabolic processes had not returned to normal.

Theoretical balances were calculated from the cumulative balances of the catabolic and anabolic phases of the "composite" patient (Table 3). During the catabolic phase, the cumulative nitrogen

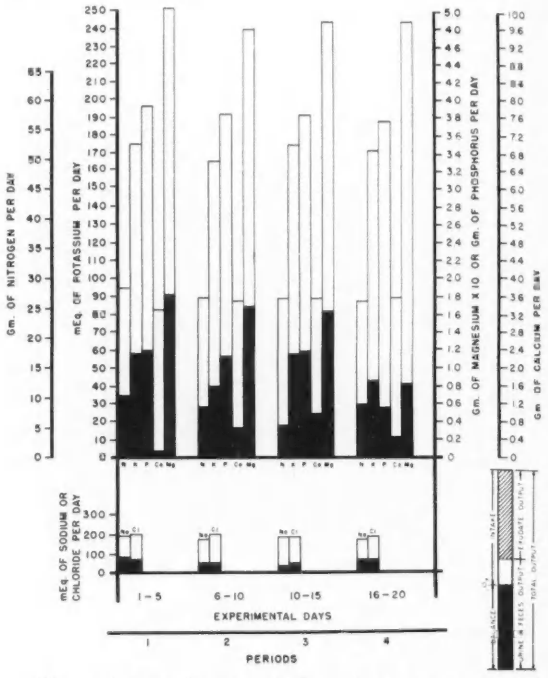

Fig. 4. Metabolic correlation chart for composite patient in late convalescence.

balance was −350 gm. and the potassium balance was −620 mEq. Theoretically on the basis of the potassium balance, the negative nitrogen balance should have been only 207 gm., 143 gm. less than were measured. The potassium:nitrogen ratio was 1.8 mEq. per gram instead of the expected 3 mEq. per gram.

The theoretical nitrogen balance of the catabolic phase of the "composite" patient, calculated from the protoplasm phosphorus balance, showed that only 99 gm. nitrogen would have been lost if it had been coming from a source associated with phosphorus, 251 gm. less than were actually lost.

During the part of the anabolic phase that was observed, one would have expected a storage of 273 gm. nitrogen on the basis of the cumulative potassium balance of 820 mEq. Actually, the storage was 83 gm. less. In our "composite" patient, there was relative potassium retention during the entire study, even though many of the individual periods showed loss or storage in the ratio of 3 mEq. potassium to 1 gm. nitrogen. During the part of the anabolic phase that was observed, 78 gm. more nitrogen were actually stored than theoretically would have been stored on the basis of the phosphorus balance.

During the study periods in late convalescence, the same pattern of potassium retention obtained, and the patients who were observed during this time actually stored 168 gm. nitrogen, only half as much nitrogen as would be expected on the basis of the potassium balance. During late convalescence, less

nitrogen was retained than would have been expected on the basis of the phosphorus balance.

Discussion

It can be seen from these data that during the catabolic phase, there were large losses of all of the elements studied. While the loss of potassium and phosphorus approached the protoplasmic ratios with nitrogen during the immediate post-burn period, the pattern of relative potassium and phosphorus retention was consistent in all patients during Period 2. During the rest of the catabolic phase, the balances of many individual study periods were in good agreement with the expected protoplasmic ratios. However, when the catabolic period was considered as a whole, more nitrogen was lost than potassium and phosphorus if protoplasm was being catabolized. This suggests loss of a relatively nitrogen-rich tissue or a loss of protoplasm with a simultaneous deposition of potassium and phosphorus, either in intracellular fluid or with glycogen. Lysis of tissues containing a large amount of nitrogen in relation to potassium, such as collagen and skin, may account for part of the nitrogen lost in excess of that expected from the potassium balance. Another explanation of the losses of nitrogen in excess of potassium and phosphorus may be the catabolism of plasma proteins, liver proteins, and other reserve protein stores during the catabolic phase.

One would expect during the anabolic phase the replacement of these elements in the ratio in which they were lost during catabolism. The potassium:nitrogen ratio of the anabolic phase of Patient #1 approached that of the catabolic phase. The phosphorus:nitrogen ratio of the anabolic phase was the reverse of the catabolic phase. During that part of the anabolic phase studied, Patient #1 was replacing nitrogen more rapidly than potassium and phosphorus in the approximate protoplasmic ratio. The "composite" patient replaced nitrogen less rapidly than potassium and more rapidly than phosphorus. The reasons for deviations from expected ratios are not yet clear. The possible effect of blood transfusions has been examined. Transfusions could not account for the observed changes. Systematic errors in the measurement of balances were carefully sought, but none were found. It must be concluded, tentatively, that anabolism in some patients was associated with an unexplained but real differential rate of mineral and nitrogen retention. That anabolism does not consist of simple reconstitution of tissue lost during the catabolic phase is clear from the observations that nitrogen and mineral retention in the anabolic phase is much greater than the previously incurred losses.

During the early post-burn stages, superficial wounds heal rapidly, and by approximately the end of the second week the first and second degree areas

TABLE 3

Observed and theoretical nitrogen balances of composite patient

MEASUREMENT	CATABOLIC PHASE (30 days)	ANABOLIC PHASE (51 days)	LATE CONVALESCENT PHASE (20 days)
Cumulative observed balances			
Nitrogen (gm.)	−350	+190	+168
Potassium (mEq.)	−620	+820	+1005
Phosphorus (gm.)	−8.8	+3.2	+20.9
Calcium (gm.)	−4.8	−9.5	+11.4
Nitrogen balance from potassium (gm.)*	−207	+273	+335
Discrepance from observed*	−143	−83	−167
Potassium:nitrogen ratio	1.8:1	4.3:1	6.0:1
Protoplasm phosphorus (gm.)*	−6.6	+7.5	+15.8
Nitrogen balance from phosphorus (gm.)*	−99	+112	+237
Discrepance from observed*	−251	+78	−69
Phosphorus:nitrogen ratio	1:53.0	1:25.3	1:10.6

* For method of calculation, see footnotes for Table 1.

are healed. This is the time when the magnitude of the negative nitrogen balance is greatest. During the remainder of the catabolic phase and up to about the sixtieth post-burn day, wound healing usually proceeds satisfactorily providing no local complicating factors have arisen at the site of the wound. If the catabolic phase is extended beyond its usual length of time for any reason and the nutritional state of the patient becomes depleted, then wound healing is often retarded and grafts do not take well. After sixty days, wound healing is usually poor regardless of the patient's nutritional status.

A number of questions remain to be answered: Is there a relationship between the rate of wound healing and the direction of the nitrogen balance? What processes have been stimulated that permit wound healing to progress so satisfactorily even when the nitrogen losses are so heavy? Is one justified in attempting to eliminate or shorten the catabolic period?

It has been the experience of this Unit that by approximately the seventh post-burn day, most patients are able to tolerate considerable oral intake. It has been possible to give sufficient amounts after the fifteenth post-burn day to maintain the patient's weight and prevent further weight loss.

This study was not undertaken to define the nutritional requirements following the burn injury but to measure the metabolic response in man. Currently the problem of the nitrogen requirements at various phases of the post-burn course is being studied in an attempt to determine the optimal amount to be given at each post-burn phase.

Summary

The balance data of an individual patient suffering from burns and the average balances of six young

men have been presented. All were studied from the time of injury until complete healing.

Large losses of protoplasm were observed in the catabolic phase. Correlation of the balances of nitrogen, potassium, and phosphorus indicated, however, that protoplasm losses did not completely explain the observed changes: either potassium and phosphorus were retained preferentially in the early catabolic phase, or, in addition to protoplasm catabolism, the negative nitrogen balance was a result of catabolism of protein containing little potassium and phosphorus. The balance data in the anabolic phase were not completely consistent with those of the catabolic phase.

BIOGRAPHICAL NOTES FROM THE HISTORY OF NUTRITION

Fredrick Accum—March 29, 1769–June 28, 1838

Modern chemistry was just in its infancy at the beginning of the nineteenth century. Lavoisier had overthrown the phlogiston theory and made possible the present system of nomenclature and formula writing. One of the most versatile chemists of the period was Fredrick Accum, who attracts our attention for his work in food chemistry and adulteration of foods.

Friedrich Christian Accum, who later changed his name to Fredrick, was born March 29, 1769 in Bückeburg near Hanover, Germany. His father was Herz Marcus, who changed his name to Accum when he was converted to Christianity; his mother was of noble Huguenot descent. Fredrick was the sixth of seven children; only three lived to maturity. Little is known of his boyhood; his father died when he was three. He had a good education at the local school and went to work at Brande's apothecary shop in Hanover; in 1793, he moved to London as Assistant Chemist in the Brande Pharmacy in that city. A few years later he set up a business for himself as a consultant chemist and as a supply house for apparatus and fine chemicals. He soon converted his laboratory to a school where he gave private lectures in experimental chemistry and also took resident pupils.

Benjamin Silliman, Sr., of Yale, studied with Accum, and he and other American chemists purchased their apparatus and chemicals from him. For years, Accum's laboratory was the only one of importance where students could get practical knowledge of chemistry.

From 1800 to 1820, Accum was the best known man in chemistry in London. He served as a chemical operator at the Royal Institution (1801), was Professor of Chemistry at Surrey Institution (1809), did chemical work for the government, and had a large business as a consultant and analyst. He carried on much research, but in the practical areas rather than in the theory of chemistry. His lectures in chemistry were very popular with the public, and he had great ability as a lecturer and demonstrator.

Accum was also a prolific writer, all of his books being excellent in style and clarity, and models of scientific expression. His first book (1803), *System of Theoretical and Practical Chemistry* in two volumes, was one of the earliest English chemistry books based on the new principles of Lavoisier.

In his later years, Accum became most interested in the chemistry of food, in 1820 publishing *Treatise on the Art of Brewing* and *Treatise on the Art of Making Wine from Native Fruits*, and in 1821, *Treatise on the Art of Making Good and Wholesome Bread* and *Culinary Chemistry*. In the latter, he showed the scientific principles of cookery and also pointed out that improper cooking of food was a frequent cause of disease. His best known work on food is *Treatise on the Adulterations of Food and Culinary Poisons, Exhibiting the Fraudulent Sophistications of Bread, Beer, Wine, Spiritous Liquors, Tea, Coffee, Cream, Confectionery, Vinegar, Mustard, Pepper, Cheese, Olive Oil, Pickles, and Other Articles Employed in Domestic Economy and Methods of Detecting Them*. This was the first serious attempt to cope with the problem of food adulteration and may be counted as the origin of the pure food movement. Accum's book sold out immediately and was reprinted in America and Germany.

The lot of the reformer is never an easy one. Accum had the temerity to print the names of wealthy and prominent men who adulterated food. Their enmity was great, and they were powerful. Accum was accused of tearing pages from books in the library of the Royal Institution (an unforgivable practice, but one which might have been hushed up for any other scientist) and was brought to trial. He was discredited, his reputation and business ruined, and he retired to Germany in 1821, where he died June 28, 1838.

Accum had married Mary Ann Simpson of London in 1798, but she died in 1816, after bearing eight children, only two of whom lived.

REFERENCES: Browne, C. A.: The life and chemical services of Fredrick Accum. J. Chem. Educ. 2: 829, 1008, 1140, 1925; Browne, C. A.: Recently acquired information concerning Fredrick Accum, 1769–1838. Chymia 1: 1, 1948 (Philadelphia: Univ. of Pennsylvania Press).—*Contributed by E. Neige Todhunter, Ph.D., Dean, School of Home Economics, University of Alabama, Tuscaloosa.*

Dr. Kate Daum

DR. KATE DAUM died in the University Hospital, Iowa City, Iowa on December 31, 1955. She was an eminent scientist, an influential educator, a revered and beloved member of The American Dietetic Association.

As President of the Association in 1932–1933, she brought honor and distinction to the Association by her achievements. In 1938, she was named one of the ten most outstanding women in Iowa by the Business and Professional Women's Club. In 1947 she received the University of Kansas Alumni Association Award for Distinguished Service. The Borden Award was presented to Dr. Daum in 1949 for fundamental research in the field of nutrition and experimental foods. In 1951, the silver anniversary of her association with the University, was celebrated by a dinner in her honor attended by some two hundred of her associates and friends. Dr. William Paul of the Department of Medicine served as toastmaster, and her brother-in-law, Dr. Harold Urey, was the principal speaker. She was presented with a silver coffee and tea service. The following day, former students, other faculty members, and friends attended a breakfast and a tea to show their appreciation.

Dr. Daum received her bachelor's and master's degrees from the University of Kansas, her doctorate from the University of Chicago. She held various teaching and lecture appointments at the University of Kansas, the University of Montana, and the University of Indiana. She has been visiting professor at summer sessions of Teachers College, Columbia University, New York City, the University of Chicago, and the North Carolina College for Women.

Dr. Daum had been Chief Dietitian at the University of Missouri Hospital and Director of the Nutrition Department at the Presbyterian Hospital in the City of New York. She came to the State University of Iowa as a Research Assistant in the College of Medicine and, following Dr. Ruth Wheeler's resignation, in 1926 was appointed Director of the Department of Nutrition. The next year she became Assistant Professor of Dietetics in the Department of Internal Medicine. In 1941, she was appointed Associate Professor of Theory and Practice of Medicine; in 1953, Professor.

In addition to her membership in The American Dietetic Association, she was a member of the American Home Economics Association, American Chemical Society, American Institute of Nutrition, Iowa Academy of Science, Iota Sigma Pi, Kappa Nu Sigma, Omicron Nu, and Sigma Xi. Dr. Daum was a charter member and first President of the Iowa Dietetic Association which was organized in

1931. Her wise guidance and continuing enthusiasm were of great value to the widely scattered members of this small organization. She was interested in any nutritional problems affecting the community and followed this interest with energetic participation in community projects. She had been a member of the State Nutrition Council since its organization in 1941. She was active in the Red Cross and during the war years organized a canteen service and organized and taught nutrition classes.

Contributions to Dietetics and Nutrition

Her illustrious contributions to the field of nutrition and dietetics are numerous and diversified. As Director of the Department of Nutrition, she showed a great capacity for organization with a warm friendly manner accompanied by a deep and sincere enthusiasm. She herself had exceptional skill in producing fine food swiftly and efficiently. This practical aspect was evidenced daily in her management of the food service to patients, personnel, and staff.

Research to her also should be practical; it should bring forth new knowledge or clarify known principles which could be applied to the problems of daily living. This attitude was exemplified by the research which she directed on aging, on the influence of various levels of thiamine intake on physiologic response, and on the effect of different

types of breakfasts on the physiologic response in various age groups.

This is only a partial list of her research since Dr. Daum was author and co-author of approximately one hundred articles published in this JOURNAL, and many other publications.

A chapter on dietetic concepts of gastro-intestinal disease was contributed by her to *Diseases of the Digestive System*, edited by Sidney A. Portis, M.D.

Because of her great interest in education, Dr. Daum herself taught many of the classes which came under her supervision. These included nutrition and dietetics for the student nurses, diet therapy for the medical students, for the dietetic interns, and for the home economics students. With her wide knowledge of scientific literature, her foundation of biochemistry, and her deep interest in nutritional problems of patients, she was a valued member of the professional team. Her suggestions were practical and stimulating. Dr. William B. Bean, Head of the Department of Internal Medicine, State University of Iowa, said,[1] "During a stage of rapid advancement in our understanding of the many specific food factors which saw the splintering of nutrition into a series of sub-specialities, Kate Daum's wisdom was to keep together the spheres of research, teaching and all the intricate practices of feeding the sick and the well upon which the successful functions of the large hospital so largely depend."

The Internship at Iowa

The dietetic internship at the State University of Iowa was the first in which the intern could complete the academic work for her master's degree. Approximately 375 to 400 students have completed this internship, the majority receiving M.S. degrees. Five Ph.D. degrees have been granted. These students have come from nearly every state in the union and from many foreign countries and have extended Dr. Daum's influence to every field of nutrition and dietetics.

The interns interested in research had a special advantage here; the dietary department is the only one which has its own research laboratory in the hospital. The training acquired here prepared them for positions in research units in other hospitals. Doctors who knew Dr. Daum would suggest that she be contacted for a research dietitian. One said, "If Kate Daum has trained her, she will have high standards of scientific accomplishment."

Dr. Daum as a Person

She inspired her students and staff with professional enthusiasm, confidence in their own abilities, and loyalty to the service of the hospital. Dr. Daum had a very personal interest in each student and staff member. She knew and remembered the husbands and the new babies as well as the new positions and professional progress.

As an individual, she was generous and hospitable; her home was the scene of many wedding receptions, Christmas parties, and innumerable small gatherings. If a guest visited the department, there would be a dinner, a breakfast, or a tea. Students and staff had many opportunities to meet informally prominent members of the profession at these events.

Enthusiastic over professional advancements, active in research, efficient in the management of the department, she still had time for an abundant personal life. Full of the joy of living, she enjoyed many outdoor activities. She adapted herself to those available in the community. In New York she went horseback riding in Central Park; in Iowa City she swam before breakfast and played golf in the late afternoon. When longer periods of relaxation were available, she organized canoe trips, picnics, and long walks usually ending in steak roasts.

Because of her physical stamina, news of her serious illness seemed almost unbelievable. One with less determination, less dedication to her profession, less devotion to her friends, and less interest in former students and staff would have found it difficult to attend the Annual Meeting of The American Dietetic Association in St. Louis last fall. She made the trip in a chartered plane, enjoying as always the colorful midwestern scenery. At the convention she was registered, although unable to attend the regular sessions. She greeted friends, talked to former interns and staff about their plans and problems. At the Iowa dinner, she spoke of the hospital, the research projects, and all the details which brought back to those present the memories of their year as an intern.

Her courage, her attempt to disregard her physical condition, her gallant effort to carry on as usual were still other examples for her interns. Their problems, which were less important when compared to her own, could also be faced with equanimity.

Dr. Virgil M. Hancher, President of the State University of Iowa, said,[2] "All of us in this university community know the greatness of her personality and the contributions which she made to the health and well being of thousands of Iowans who have been patients in the University Hospital. There is no measure for the loss we have suffered."

For The American Dietetic Association and the profession, too, there is no measure for the loss of a distinguished member and a loyal friend.—*Nelda Ross Larsson, Chief Dietitian, The Presbyterian Hospital, New York City.*

[1] Iowa City *Press-Citizen*, December 31, 1955.

[2] Iowa City *Press-Citizen*, December 31, 1955.

Editorial

Report of the Nominating Committee, The American Dietetic Association, 1955–56[1]

The Nominating Committee of The American Dietetic Association—A. June Bricker, Helen Rankin Demsey, Margaret H. King, Marjorie M. McKinley, and Ruth W. Spencer, Chairman—presents the following ballot for 1956–57:

PRESIDENT-ELECT

E. Neige Todhunter: B.H.Sc., M.H.Sc., University of Otago, New Zealand; Ph.D., Columbia University

Positions held:

- High school teacher, New Zealand
- Associate Professor of Nutrition, School of Home Economics, and Research Worker, Agricultural Experiment Station, State College of Washington, Pullman
- Director, Research Laboratory of Human Nutrition, and Professor and Head, Department of Foods and Nutrition, School of Home Economics, University of Alabama, Tuscaloosa
- Present position—Dean, School of Home Economics, University of Alabama, Tuscaloosa

Professional activities:

- Speaker of the House of Delegates, A.D.A.
- Delegate, A.D.A.
- Member: Journal Board (Chairman); Investigation Board; Membership Committee; Awards, Scholarship and Loan Fund Committee; Nominating Committee; History of Nutrition and Dietetics Committee (Chairman); Academic Requirements Committee (Chairman)—all A.D.A.
- A.D.A. representative to the A.A.A.S. Council
- A.D.A. representative on joint American Home Economics Association—School Food Service Association—A.D.A. Committee
- Councillor, American Institute of Nutrition
- Chairman, Advisory Committee, Dietetic Division, Veterans Administration
- Chairman, Food and Nutritional Advisory Committee, U.S.D.A.
- Chairman, Colleges and Universities Department, American Home Economics Association
- Chairman: Advisory Committee of Bureau of Human Nutrition and Home Economics, Research Committee—both of A.H.E.A.
- Member: Sigma Xi, Sigma Delta Epsilon, Omicron Nu, Delta Kappa Gamma

Publications:

- Approximately forty research papers and scientific articles in this JOURNAL, *Journal of Nutrition*, *Food Research*, *American Journal of Physiology*, *Journal of Home Economics*, and experiment station bulletins
- Popular articles in *What's New in Home Economics*, *Nation's Schools*, *Progressive Farmer*, *Alabama School Journal*, and *Southern Hospitals*
- Author of various booklets on nutrition

[1] Other nominations may be made by nomination petitions signed by not less than 400 members of the Association, of whom not more than 30 shall be from any one state, assented to in writing by the person or persons named thereon as nominees, and filed with the Secretary at the office of the Association on or before April 15, 1956.

SPEAKER-ELECT OF THE HOUSE OF DELEGATES

Maniza Moore: A.B., Mississippi State College for Women; graduate study, University of Colorado, University of Wisconsin, and George Peabody College; dietetic internship, Peter Bent Brigham Hospital, Boston

Positions held:

- Chief Dietitian, St. Luke's Hospital, Jacksonville, Fla.
- Chief Dietitian, Grace Hospital, New Haven, Conn.
- Chief Dietitian, Beth Israel Hospital, Boston
- Director of Dietetics, Vanderbilt University Hospital, Nashville
- Present position—Area Chief, Dietetic Service, VA Area Medical Office, Atlanta

Professional activities:

- President and Chairman, House of Delegates, A.D.A.
- Delegate-at-Large, A.D.A.
- Member, Coordinating Cabinet, A.D.A.
- Member, Council of the House of Delegates, A.D.A.
- Secretary, House of Delegates, A.D.A.
- Convention Chairman, A.D.A.
- Chairman, Food Administration Section, A.D.A.
- Member: Nominating Committee, Finance Committee—both A.D.A.
- President, Massachusetts and Tennessee Dietetic Associations

Geraldine M. Piper: B.A., Eastern Illinois State College; M.S., University of Tennessee; dietetic internship, King County Hospital, Seattle

Positions held:

- Dietitian, Ohio State University Hospital, Columbus
- Nutritionist, Oklahoma Department of Health, Oklahoma City
- Nutritionist, Diabetes Branch, U.S. Public Health Service, Washington, D. C.
- Present position—Associate Professor of Nutrition, University of Tennessee, Knoxville

Professional activities:

- Chairman, Community Nutrition Section, A.D.A.
- Member, Coordinating Cabinet, A.D.A.
- Secretary, Oklahoma Dietetic Association

SECRETARY

Helen Hawver Anderson: B.S., James Millikin University; dietetic internship, Presbyterian Hospital, Chicago

Positions held:

- Dietitian, Presbyterian Hospital, Chicago
- Director of Dietetics, Henry Ford Hospital, Detroit
- Head Dietitian, Santa Barbara (Cal.) General Hospital
- Present position—since 1942, Director of Dietetics, Stanford University Hospitals, San Francisco

Professional activities:

- Delegate, A.D.A.
- Member, Council of the House of Delegates, A.D.A.
- Member: Placement Bureau Board, Nominating Committee—both A.D.A.
- President, Vice-President, and Section Chairman, California Dietetic Association
- Vice-President, Illinois Dietetic Association

Evelyn A. Carpenter: B.S., M.S., Drexel Institute of Technology
Positions held:
Head Dietitian, West Philadelphia Hospital for Women
Head Dietitian, Physicians and Surgeons Hospital, Wilmington, Delaware
Chief Dietitian, Philadelphia Hospital for Contagious Diseases
Director, Dietary Department, North Division, Philadelphia General Hospital
Present position—Director of Dietetics, Philadelphia General Hospital
Professional activities:
Chairman, Local Convention Arrangements, A.D.A.
Member, Council of the House of Delegates, A.D.A.
Delegate, A.D.A.
Member, Placement Bureau Board, A.D.A.
President and Vice-President, Pennsylvania Dietetic Association
Vice-President and Secretary, Philadelphia Dietetic Association
Publications:
Articles in *Hospital Management* and *Philadelphia Medicine*

DELEGATES-AT-LARGE

Helen R. Cahill: B.S., Iowa State College; M.A., George Washington University; dietetic internship, Michael Reese Hospital, Chicago
Positions held:
Administrative and Therapeutic Dietitian, Hurley Hospital, Flint, Michigan
Food Supervisor, Welfare and Recreational Association, Washington, D. C.
Therapeutic and Administrative Dietitian, VA Hospital, Minneapolis
Head Dietitian, VA Hospital, Hines, Illinois
Instructor in Dietetics, VA Hospital, Los Angeles
Chief, Dietetic Division, VA Branch Office, San Francisco
Present position—Senior Dietetic Specialist, Dietetic Division, Veterans Administration, Washington, D. C.
Professional activities:
Member: Committee on International Relations among Dietitians, A.D.A.
Member, Professional Education Section Project Committees, A.D.A.
Chairman, Professional Education Section, California Dietetic Association
Chairman, Vocational Guidance Committee, California and District of Columbia Dietetic Associations

Fern W. Gleiser: B.S., University of Washington; M.S., Teachers College, Columbia University
Positions held:
Assistant Manager of Commons, University of Washington, Seattle
Assistant Director of Residence Hall and Manager of Tea Room, Oregon State College, Corvallis
Instructor in Institution Administration, Teachers College, Columbia University
Assistant Professor of Institution Administration, Drexel Institute, Philadelphia
Professor and Head of Institution Management, Iowa State College, Ames
Present position—since 1944, Professor of Institution Economics and Management, School of Business Administration, University of Chicago
Professional activities:
President, A.D.A.
Speaker of the House of Delegates, A.D.A.
Treasurer, A.D.A.
Delegate-at-Large, A.D.A. (one year only)
Delegate, A.D.A.
Member: Finance Committee (Chairman), Nominating Committee, Administrative Approval Committee; Special Committee on Professional-Economic Status of the Dietitian—all A.D.A.
President, Iowa Dietetic Association
Publications:
Articles in this JOURNAL and other professional publications

Cora E. Kusner: Diploma, Battle Creek (Mich.) College
Positions held:
Assistant Dietitian, Children's Fresh Air Camp and Hospital, Cleveland
Since 1924—Dietitian, Colorado State Hospital, Pueblo
Present position—Director of Dietetics and Director of Approved Dietetic Internship, Colorado State Hospital, Pueblo
Professional activities:
Chairman, Food Administration Section, A.D.A.
Member, Coordinating Cabinet, A.D.A.
Delegate, A.D.A.
Member: Publications Committee (Chairman); Committee to Cooperate with American Psychiatric Association in Formulating Food Standards for Mental Hospitals (Chairman); Joint Committee of the American Hospital Association—A.D.A.; Committee which prepared *A Guide to the Selection and Training of Food Service Employees*—all A.D.A.
President, Colorado Dietetic Association

NOMINATING COMMITTEE

The following candidates (five of whom are to be elected) for the Nominating Committee for 1956–57, have been selected as representatives of five geographic areas determined on the basis of distribution of the membership. Members are to vote for one person from each geographic area.

Geographic Area I[2]

Esther A. Atkinson: B.S., University of Nebraska; M.S., Kansas State College
Positions held:
Director of Home Economics and Food Service, College Residence Hall, McPherson College
Instructor in Institutional Management, University of Idaho
Food Supervisor, Army Mess Unit, and Instructor in Quantity Cookery, Kansas State College
Present position—Professor and Head, Department of Hotel and Institution Management, Pennsylvania State University
Professional activities:
Secretary, A.D.A.
Delegate, A.D.A.
Member: Membership Committee (Chairman); Committee on Revision of Experience Forms for Evaluation of Experience in Lieu of Internship for A.D.A. Membership (Chairman); Committee on International Relations among Dietitians (Chairman); Membership Requirements Committee (Chairman); Committee to Study the Professional Position of the Dietitian—all A.D.A.
President, Pennsylvania Dietetic Association
Chairman, Professional Education Section, Pennsylvania Dietetic Association

[2] Geographic Area I: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, and Pennsylvania.

Geneva L. Marble: B.S., Kansas State College; dietetic internship, Pennsylvania Hospital, Philadelphia
Positions held:
Relief Dietitian, New England Deaconess Hospital, Boston
Dietitian, Massachusetts Women's Hospital, Boston
Present position—since 1939, Chief Dietitian, Boston Lying-In Hospital
Professional activities:
Delegate, A.D.A.
President and Secretary, Massachusetts Dietetic Association

Geographic Area II[3]

Frances A. Halbert: B.S., Mississippi State College for Women; graduate work, Teachers College, Columbia University; dietetic internship, Barnes Hospital, St. Louis
Positions held:
Assistant Dietitian, Spartanburg (S. C.) General Hospital
Assistant to Dietary Director in Charge of Administration, Touro Infirmary, New Orleans
Present position—Director of Dietary Service, Hotel Dieu Sisters Hospital, New Orleans
Professional activities:
Delegate, A.D.A.
Member: Public Relations Committee, State Associations Committee—A.D.A.
President, Louisiana Dietetic Association
President and Vice-President, New Orleans Dietetic Association

Edith A. Jones: B.S., University of Alabama; M.S., University of Tennessee; dietetic internship, The Johns Hopkins Hospital, Baltimore
Positions held:
Assistant in Charge of Main Kitchen, The Johns Hopkins Hospital
U.S. Army dietitian in U.S. and England
Dietitian in Charge of Pediatric Section, and Dietitian in Charge of Student Curriculum, School of Dietetics, The Johns Hopkins Hospital
Nutritionist, Nutrition Branch, Division of Chronic Disease, U.S. Public Health Service, Washington, D. C.
Dietitian Consultant, Division of Hospital Facilities, U.S. Public Health Service, Washington, D. C.
Present position—Dietitian Director, U.S. Public Health Service, and Chief, Nutrition Department, The Clinical Center, National Institutes of Health, Bethesda, Maryland
Professional activities:
Delegate, A.D.A.
Chairman, Food Administration Section Project, A.D.A.
President, District of Columbia Dietetic Association
President-Elect, Maryland Dietetic Association
Publications:
Papers in this JOURNAL and other hospital publications

Geographic Area III[4]

Bertha Biltz: B.S., Kansas State College; M.S., University of Chicago; dietetic internship, Michael Reese Hospital, Chicago
Positions held:
Assistant Dietitian, Edward J. Meyer Hospital, Buffalo
Chief Dietitian, Toledo (Ohio) Hospital
Therapeutic Dietitian, St. Marys Hospital, Rochester, Minnesota
Director of Dietetics, St. Luke's Hospital, Cleveland
Administrative Adviser, The American Dietetic Association, Chicago
Present position—Director of Dietetics, St. Luke's Hospital, Cleveland
Professional activities:
Member, Coordinating Cabinet, A.D.A.
Member, Council of the House of Delegates, A.D.A.
Delegate, A.D.A.
Member: Hospital Approval Committee, Membership Requirements Committee—A.D.A.
President, Ohio Dietetic Association

Margaret Dunham: B.S., University of Alberta; M.S., Western Reserve University; dietetic internship, Indiana University Medical Center, Indianapolis
Positions held:
Staff Dietitian, Indiana University Medical Center, Indianapolis
Assistant Dietitian, Boston Lying-In-Hospital
Administrative Dietitian, Indiana University Medical Center, Indianapolis
Present position—Nutritionist, Indiana State Board of Health, Indianapolis
Professional activities:
Delegate, A.D.A.
Member: Placement Bureau Board—A.D.A.
President-Elect, Vice-President, Secretary, Treasurer, and Section Chairman, Indiana Dietetic Association
Publications:
Paper in the *American Journal of Public Health*

Geographic Area IV[5]

Mary Ellen Dambold: B.S., Oklahoma A. and M. College, dietetic internship, Michael Reese Hospital, Chicago
Positions held:
Dietitian, Grant Hospital, Chicago
Dietitian, Michael Reese Hospital, Chicago
Administrative Dietitian, University of Michigan Hospital, Ann Arbor
Present position—Chief Dietitian, Baylor University Hospital, Dallas
Professional activities:
Delegate, A.D.A.
President and Section Chairman, Texas Dietetic Association

Helen McLachlan: B.S., M.A., University of Missouri; dietetic internship, Presbyterian Hospital, New York City
Positions held:
Dietitian, St. Francis Hospital, Evanston, Illinois
Dietitian, Cook County Hospital Nurses Home, Chicago
Dietitian, St. Thomas Hospital, Nashville
Present position—Associate Professor of Dietetics, St. Louis University Hospitals, St. Louis
Professional activities:
Chairman, Local Convention Arrangements, A.D.A.
Delegate, A.D.A.
Member, Hospital Approval Committee, Membership Committee—A.D.A.
President, Missouri Dietetic Association
President, St. Louis Dietetic Association
Member, Advisory Committee, Dietetic Division, Veterans Administration

[3] Geographic Area II: New Jersey, Delaware, Maryland, Washington, D. C., Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, West Virginia, Tennessee, Kentucky, Arkansas, and Louisiana.

[4] Geographic Area III: Michigan, Ohio, Indiana, and Illinois.

[5] Geographic Area IV: Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas.

Geographic Area V[6]

Louise K. Christensen: B.S., North Dakota State College; dietetic internship, Cook County School of Nursing, Chicago
Positions held:
Assistant Dietitian and Chief Dietitian, North Dakota State Tuberculosis Sanitorium, San Haven
Dietitian, Sherman Hospital, Elgin, Illinois
Dietitian, Kern County Tuberculosis Sanatorium, Keene, California
U.S. Army Dietitian
Assistant Dietitian, Residence Halls and Coffee Shop, University of Washington, Seattle
Assistant Administrative Dietitian, California Hospital, Los Angeles
Present position—Dietitian, Mira Hershey Hall, University of California at Los Angeles
Professional activities
Delegate, A.D.A.

[6] Geographic Area V: Hawaii, Washington, Oregon, California, New Mexico, Arizona, Idaho, Utah, Nevada, Montana, Wyoming, and Colorado.

President and Secretary, California Dietetic Association
Manager, Central Office, California Dietetic Association

Mary Ellen Johnson: B.S., Iowa State College; dietetic internship, King County Hospital, Seattle
Positions held:
Staff Dietitian, King County Hospital, Seattle
Therapeutic Dietitian and Administrative Dietitian, St. Luke's Hospital, Denver
Assistant to the Educational Director, The American Dietetic Association, Chicago
Present position—Educational Director for Dietetic Internship, Colorado State Hospital, Pueblo
Professional activities:
Secretary and Chairman of Membership Committee, A.D.A.
Delegate, A.D.A.
Member: Membership Requirements Committee, A.D.A.
President, Secretary, Treasurer, and Section Chairman, Colorado Dietetic Association
President, Secretary, and Treasurer, Denver Dietetic Association

Interruption or Opportunity?

It is difficult to train staffs and employees to keep "service to others" uppermost in their minds. The diet maids ask, "Isn't there some way to eliminate held trays? We must serve late trays all morning." The dietitians ask, "Can't we keep the nurses out of the kitchen while we are serving trays?" One noon a nurse came in during service and said a patient was feeling so much better that he wanted some more bread, butter, and jelly. Another reported that two patients had not yet returned from X-ray. A third came in to say one lady felt ill after a transfusion and wanted only toast and tea.

If we are trying to get the food out of the kitchen in the shortest possible time, these incidents are all irritating interruptions. But, if we keep our sights on *satisfactory food service*, they are not interruptions of our job, they *are* our job. Each so-called interruption increases our opportunities for service. Why do we think it is important to get out one hundred trays in 30 min. if half the people are still in X-ray or too sick to eat the food when it arrives in their rooms?

Why do we not recognize our opportunities and make use of them? Too often, we concentrate on the "mechanics" instead of our *real aims*.

Take for instance, the doctor who has been operating since early morning, missing his noon meal. He comes to the cafeteria after closing hours and asks for a fried egg, only to be told by the dietitian that the cafeteria is closed and she has no food until supper. Or, suppose the cafeteria menu reads, "creamed chicken on biscuit." Everyone wants a biscuit, but is told that biscuits go only with the creamed chicken.

In none of these incidents did the dietitian make friends or influence people. We must not forget the human side of our job. In modernizing and streamlining our daily routines, in attempting to apply principles of management to our operations, we must remember that food service is a combination of science and art. Our finished product is a satisfied human being, and the intangibles of human relations are not always clearly defined. Our success is based not entirely on motion and time studies, the production curve, and the time clock, but on how diligently we seek opportunities for service and how effectively we take advantage of our opportunities.—*Martha Nelson Lewis, speaking before the Kentucky Dietetic Association on March 25, 1955, in Lexington.* (*Published by* The Sunflower *of the Kansas Dietetic Association 10: 4 (Sept.), 1955.*)

Current Comment

Planning a Kitchen with a Future[1]

LENDAL H. KOTSCHEVAR, Ph.D.[2]

Director, Residences and Food Services, and Chairman, Home Economics Department, Montana State University, Missoula

Today many of us are building or planning to build kitchens which will have to meet increasing production loads as time goes on. A great number of these are being planned with the idea that equipment will be added as it is required. This can, of course, be done. However, certain precautions should be taken if we are going to build in this manner so that future expansion can be efficient and inexpensive. Experience has shown that remodeling small kitchens into large ones is almost as expensive as original construction; therefore, in planning a kitchen with a future, the floor space allocated in the original construction should be that which will be required at maximum production. Also, the location of the various kitchen units and the electricity, gas, sewer lines, and other utility loads should be based on the future production requirements. And, lastly, it should be known in the original planning where all the dining areas will be. Dining space, unlike kitchen space, is not expensive to add as you expand, but the location should be established at the onset so that rapid and efficient delivery of food to it is later possible.

At Montana State University a kitchen has been built to "grow into" an increasing production load. We call it a kitchen with a future. Its floor space is all that will ever be required, and the future service lines for utilities are installed. When the need arises, a large cafeteria building will join this kitchen on the West. In the meantime, dining areas to the East and above will handle the numbers which we must serve in the first few years of use. Our cook's unit, dishwashing unit, and certain other facilities have been purposely placed on the west side of the kitchen, for in that direction eventually the main food service will flow. In the kitchen one can see capped service lines sticking up from the wall or floor. These service lines are for future equipment which will be installed when production demands. Space is allocated and the service lines are installed for new revolving ovens, but until the need arises, the old ovens from our former kitchens will do the job. In another area, a pot sink stands where a pot washer is to be. Because enrollment is increasing at a faster pace than planned, a flight-type dishwashing machine will be installed this year. Since the service lines for this machine, including ventilation, are already in, the change is easy to make.

A kitchen so planned is not beautiful and will never win awards. Nevertheless, it is full of utility, and expansion proceeds with little expense and few growing pains.

Some may argue that "you can't build a kitchen that way. Kitchen layouts change too rapidly for that." They are misled. What are mistaken for changes in layout are only changes in methods or equipment.

Ten years ago in 1945 and 1946, a committee of the Food Administration Section of The American Dietetic Association prepared papers (1) setting forth the basic essentials of floor layouts in food service departments. Several months ago I wrote the members of this committee asking, "What in your opinion have been the most significant changes in the planning of floor layouts since you assisted in this committee work?" Their replies indicated that we have neither gone through a revolution in kitchen planning nor that we are going to undergo one. The committee's replies indicated that while equipment and methods might change quickly, the layout of the kitchen changes slowly. Mary Northrop, the Committee Chairman, summed up the results of this inquiry when she replied, "The papers were basic. As a result, I don't believe the principles have changed much, or are likely to. Perhaps, therefore, an addition to the material is more needed than a revision of it."

Fortunately, these committee members were very specific in indicating just how changes in equipment and methods were likely to affect our kitchen layouts and this is what we, who must plan and operate kitchens, want to know. I shall try to summarize the replies for you.

Work Centers

The committee indicated that our planning of work centers is being influenced more and more by the principles of motion economy, and this is changing somewhat the placement of our equipment. For instance, we now think of the worker as an island with equipment grouped about him, so that distances are limited and time and energy thereby conserved. Also, because we have found that our

[1] Presented at the 38th Annual Meeting of The American Dietetic Association in St. Louis, on October 20, 1955.

[2] The author wishes to express his appreciation to many of the members of the 1945–46 Committee of the Food Administration Section (Mary W. Northrop, Chairman) for the ideas they contributed for the preparation of this paper.

kitchen units really do a number of jobs, they are being broken into separate work centers. For instance, the baker's unit in a large kitchen is now considered as consisting of three work centers: the production, the baking, and the assembly centers. Likewise, a salad unit has two work centers, the preparation and the assembly centers. Also, work heights are being challenged and changed. The principle of storage at point of use and the elimination of handling by one-motion storage for food and equipment is fast gaining popularity.

At Montana State University there is no fixed dish storage. All our dishes are stored and moved in carts. This saves a great deal of labor in dish handling. We also have no fixed storage in our refrigerated areas although we do have fixed storage in our frozen storage areas. We have also found that wall space formerly used for fixed shelving is a good area for storing of portable equipment when it is idle.

In the planning of a kitchen many now recommend that the vegetable preparation unit be located adjacent to the delivery area so that "wasty" or dirty vegetables can be cleaned first before being moved to refrigerated storage.

Also, some institutions are finding it advantageous to have a storeroom clerk weigh or measure all ingredients for recipes in the exact amounts required to produce a certain number of portions. This eliminates work for highly skilled cooks and bakers and gives much greater control of standards and cost to the dietitians. Such a procedure, of course, eliminates the need for storing of flour, shortening, sugar, and other supplies at the unit where the food is prepared.

Self-Service

There is a trend toward more self-service in cafeteria counters. We are speeding up lines by using the supermarket-type counters and also by moving condiments, silver, napkins, and other items away from the service counter. Counters are shorter and we are no longer using fixed shelving in them to hold dishes. Instead, we are using portable carts which can be pushed under the counters and then pulled out and set perpendicular to the service counter when service begins. Pass-throughs for cold or hot foods have proved efficient and eliminated much work in food handling. However, at Montana State University, we use an enclosed light-weight aluminum portable cart for hot or cold foods instead of pass-throughs. In addition to being less expensive, they give greater mobility and flexibility.

Emphasis on Sanitation

Equipment placement and design have been affected by the increasing attention we are giving to sanitation problems. For some time we have been recommending that equipment be placed away from walls and other obstructions so that it will be accessible from all sides for cleaning. The use of portable or wall-mounted equipment is modifying this recommendation somewhat. It may be of interest to many that at MSU, we found it possible to take our steam equipment off stands and wall-mount it in our new kitchen, thus saving a great deal of money.

We should also note that the increasing use of multiple-location or central garbage grinders may eliminate the need for refrigerated garbage spaces and can wash rooms. Mechanical pot washers and flight-type dishwashers are also reducing space requirements.

The recommendations of the National Sanitation Foundation should be considered in planning any kitchen with a future, for their recommendations today will be incorporated in tomorrow's equipment and kitchen planning.

Partitions Being Eliminated

Sound control and ventilation have improved so much that we are eliminating partitions in the kitchen. At MSU even our dishwashing unit sits out in the open with the rest of the kitchen. This removal of partitions gives greater flexibility between kitchen units and improves supervision.

Influence of Pre-Prepared Foods

The factor given most emphasis by the committee was the influence which the increasing use of prepared or partially prepared foods was likely to have on layouts. The growing use of preportioned meats has caused institution butchershops to lose their identity, and vegetable preparation units are undergoing this same change, as we increase the use of peeled potatoes, prepared French fries, washed and trimmed vegetables, sectioned or diced fruits, sliced or peeled and cored apples, and frozen fruits and vegetables.

Our need for refrigerated space is definitely on the down trend, for preportioned meats and the processed fruits and vegetables require less storage space. On the other hand, we must increase considerably our low-temperature space. In addition to using larger and larger amounts of frozen fruits and vegetables, we are using much more frozen fish, poultry, and meat. Nineteen per cent of the meat used in institutions is frozen.

Others have indicated we will soon, in all probability, be buying frozen food which only requires reconditioning or cooking to be served. Others have said that institutions themselves are now preparing and freezing much of their own foods. At MSU we make up many products and freeze them—even parfaits—on days when we are not busy and then withdraw them for use on days when we are busy. At MSU we have noted the trend, and we have planned our refrigerated areas so that when the need arises we can discontinue their use one by one and turn them into frozen storage areas.

It is probable that, as we increase our use of frozen foods, new demands will be made on our cooking equipment. More and more data are being collected to indicate that frozen foods, either raw or cooked, should be cooked or reconditioned in the frozen state. Much of our present cooking equipment has not been designed to take heavy loads of frozen foods, and there is a need for new equipment or improved equipment which will provide a much more rapid heat input into frozen food. What this equipment will be we cannot tell, but from the trend we can surmise that oven and steam equipment space will take increasing precedence over grill and broiler space.

The use of the commercial bakery mix will change the layout of our bake shops, but not materially. We will no longer require bins for flour, dry milk, sugar, and other ingredient storage. Also, our storerooms will change as we reduce our sugar, fat, and flour requirements and increase our supply of premixed sack goods.

The Future

These comments by these committee members are most valuable to one planning a kitchen today, and they indicate in many ways what we can expect in the future. The changes are not going to be revolutionary, and we can plan so that when change occurs we are ready for it. We must remember there are certain space relationships which will not change. An 18 by 26 in. baking sheet is always going to hold about fifty servings of cake, and will require the same size oven to hold it. A pork chop is always going to require the same surface area on the grill to cook it, and a 20-qt. mixer is going to hold just so many servings of mashed potatoes. These volumes and sizes of food are an influential factor in establishing many of the basic space relationships of the kitchen and in the placement of equipment. That is why changes come slowly.

Twenty-one years ago Grace Smith proposed that many work heights be 37 to 38 in., and that sinks be no deeper than 14 in. We are only now beginning to do that. We are also still baking in the same type of ovens the Chinese used 2000 years ago. Therefore, I don't think we ought to fear change. I only think we ought to be prepared for it when it happens.

REFERENCE

(1) Committee of the Food Administration Section, A.D.A.: Planning the floor layout for the food service department. Parts 1, 2, and 3. J. Am. Dietet. A. 23: 34, 129, 235, 1947.

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Quality Food—What Is It? How Do You Achieve It?[1]

PATRICIA A. BEEZLEY

Manager, Pennant Cafeteria, Topeka, Kansas

What is meant by *quality* food? In the field of automobiles, even though we may own a Chevrolet or Ford, we recognize quality as being a Cadillac or a Continental. In footwear, the vote for quality would easily go to a pair of alligator shoes over a pair of kid shoes, but in the food field, quality is rather intangible. Because quality in many instances is a personal determination, I face this definition with mixed emotions.

Even though we find it difficult to pinpoint a definition of quality food, we know that our discussion will be directed toward the best food we can serve in regard to flavor, appearance, and texture. Quality food is good food and a goal toward which we are ever striving. As we set up our objectives for each week, either consciously or subconsciously, we head the list with quality food—food which we can serve with pride. Our organization has adopted the phrase, "If you're not proud of it, don't serve it." That motto indirectly is our definition of quality food.

Let us now develop some of the practical ideas and theory that will enable us to serve food that will stand on its reputation at our operations and freely allow those who dine with us themselves to apply the word "quality" to the food they have eaten.

We appreciate our fine commercial establishments which have developed a reputation and built a business on foreign food, but we here are primarily interested in the production of basic American dishes prepared to perfection so that those to whom they are served will be not only sated but happily satisfied.

Personnel in the Quality Equation

Quality certainly begins with fluffy, mashed potatoes, creamy macaroni and cheese, tender, flaky biscuits. Simple foods, yes—but creations in their own right when care is given to the little things that matter in seasoning and eye appeal, simple things to your employees who have developed a love of craftmanship. If your employees can have pride in these simple foods, the foods which are the mainstays of our menus, they will be doubly careful and equally proud to prepare the more delicate dishes, such as chicken à la king, cheese soufflé, or lemon angel pie. Such employees can be trusted with the stronger seasonings, such as those used in creoles or curries, and will appreciate that these seasonings must be used with care—care which is coupled with imagination in perfecting the recipe, care which creates a dish having an evasive flavor and leaving

[1] Presented before the 38th Annual Meeting of The American Dietetic Association in St. Louis, on October 19, 1955.

the guest wondering just how that flavor was achieved. Yes, your employees have a right to be proud in the preparation of such quality food.

Thus, we cannot discuss quality food without discussing personnel. We know that low turnover not only maintains quality in food but is responsible for reducing costs. The Texas Restaurant Association recently made a survey in which they determined that the cost of replacing a good restaurant employee (and I believe this would apply to institutional employees) was $250. Of course, this is mainly a hidden cost, but not actually hidden when we must give the word to remove from the menu a dish which is not up to our standard of quality. No, the public never pays for our mistakes. The dissatisfied customer, the unhappy patient, the disgruntled student certainly do not build good will for our establishments.

I cannot discuss quality without a reference to Anna Maude Smith, cafeteria owner from Oklahoma City. She tells the story of a Y.W.C.A. secretary, who, when Miss Smith managed the Y.W. cafeteria, asked to visit the kitchen to see if she could determine what made the difference between their food and the food served in the usual commercial establishment. The Secretary, after a morning spent in the kitchen, reported that she had discovered the answer. The women in that kitchen were putting the food together with "infinite pains." Infinite pains, loving care, or what have you—it's the intangible something which takes food from the ordinary to food that is, as we say, "out of this world." Normally it is beyond the comprehension of the average individual that such quality food can be prepared in quantity.

Supervision in the Equation

Quality food production begins in the mind of the worker. It is the responsibility of the supervisor to instill in each production employee the desire to produce the best product possible. I know of no better way to do this than by regular, short, informative, inspirational meetings. Our employees cannot know what we are thinking if we do not tell them. We save much confusion and often misunderstanding by having meetings, rather than letting the "grapevine" take its toll.

Food production workers are artists using food as their medium just as surely as a painter uses his palette and colors. You, as supervisors, must provide the inspiration, environment, and desire for these co-workers to develop this pride of craftsmanship to add that touch of imagination which is essential to quality food production.

Quality food is impossible without proper supervision. I have always appreciated the story of the boy who wrote his father about the loss of a football game. The boy said, "The other team found a hole in our line and went through to score." He added, "The hole in the line was me." If every supervisor would analyze problem situations which arise, she would usually find that the difficulties stemmed from improper orientation, poor training, faulty work schedules, or laxity in supervision. Our production organization might be compared to the game of football. Every play, if properly executed with each man fulfilling his assignment, will be a touchdown play. Isn't this true in our production? If planning is complete and accurate, the kitchen and dining room fairly sing. Therefore, when a supervisor says that food quality is suffering because of a problem employee or employees, I am tempted to suggest, at the risk of becoming very unpopular, that the hole in the line may be on a higher level.

Introspection, prior to employee criticism, is a "must" if we are to achieve true success as supervisors. Self-analysis will not only make us better supervisors, but will vastly improve our organization and lift the standard of the foods we serve. It is too easy to place blame on another's shoulders. I challenge you, if you are the manager or director of your food service unit, to think twice before you criticize an employee or supervisor. Is your planning beyond reproach? Nine out of ten times, I find that management, somewhere along the way, fumbled and "the hole in the line is me."

Working Conditions a Factor

Our No. 1 supervisory problem today is people—our fellow human beings who think and respond as we do. The solution to this problem can be attained only by the simple human relations approach or the Golden Rule. If we truly love our employees, our personnel problems are no longer insurmountable.

Many employers have the mistaken idea that employees are on the job only for the wages they receive. They often say that if they could double wages their personnel problems would be over. A recent survey indicates the fallacy of this concept.

The survey showed that management made some guesses as to what the employees want. First, it was thought, employees want good wages; second, job security; third, promotion. Management felt that the fourth need was good working conditions, and fifth, was interesting work. This same survey also polled employees who gave these ratings to their needs. First, employees asked appreciation for the work they do—no money invested by the employer, just good human relations. Second, they wanted to be "in on the know of things." Third, they wanted interest in their personal problems. Fourth was the need for job security, which management ranked second. Fifth was good wages, which management had ranked first.

This survey reminds us that too many employers do not really think of employees as human beings. It costs nothing in dollars and cents to speak a word of appreciation, to spend a few minutes as a personal counselor, or to let your employees know the needs

of your organization so that they can be of greatest service and true members of the team.

By talking with our employees as co-workers, we not only develop morale, but we may discover that our quality is being influenced by factors over which our employees have no control. For example, a change in flour without adequate testing, although a money-saving step, may be a hidden cost because we are sacrificing quality. It is our responsibility as management to provide the proper climate and materials.

Equipment a Factor

In this area, we should also remind ourselves that quality food is next to impossible without proper equipment. Sometimes we as supervisors become so removed from actual production that we do not comprehend the problems of inadequate or faulty equipment. Our regular production personnel may adjust to a faulty thermostat, but should one of these people have an accident, we may find it quite hard to maintain our standards with a relief person who cannot know the oven's secrets, because we do not know how to jiggle the thermostat. Certainly our responsibility in supervision includes systematic routine checks on all equipment to keep it in top condition.

And, let us not discount equipment just because the new has worn off. It isn't always the stainless steel kitchen which is the stage for the performance creating top quality food. The finest equipment, without employees who have vision, interest, and the desire to venture into the unknown, presents an unsolvable formula with which to work.

In the field of equipment and layout, we cannot overlook the impact of work simplification, which is, of course, efficiency resulting in many hours of labor saved. Certainly a frustrated worker, searching fruitlessly for the right utensil or finding it necessary to travel in aimless circles has difficulty in organizing his production so that he can give the time required to taste and garnish each product to your standard of perfection. Last summer we were fortunate to have join our organization a person who has had several years of foods laboratory teaching. One of her first projects was not only to find a place for everything and insist on everything being in place, but to label the proper location for each piece of equipment and article of food. This labelling is a boon to relief personnel and saves many questions of the supervisor. It also gives the new employee more confidence. With the present high cost of labor, wasted hours will not long remain a hidden cost.

Other Factors

There are so many factors influencing quality food that we can easily overlook some very important items. We could, of course, spend considerable time on the need for rechecking recipes periodically to keep the food cost ratio in balance and of checking recipes for accurate adherence. Quality cannot be overlooked in the use of left-overs—a costly item in too many kitchens.

In closing, I would like to remind you that, basically, quality food is *good* food. It embodies the challenge of properly trained personnel; adequate cooking and serving equipment; quality in all meats, produce, and groceries we purchase; adherence to recipes which have proved successful; a flair for decorating and garnishing; and above this, as above and beyond the call of duty, an imagination and enduring patience which is beyond the belief of everyone except, perhaps, a seasoned supervisor of a food production unit.

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The Art of Preparing Good Food[1]

MARGARET DICKERSON

Manager of Food Department, Hutzler Brothers Company, Baltimore

ENOUGH has never been said or felt among most Americans about what a *great art* the preparation of delicious and attractive food can be. In all large kitchens you have the opportunity of creating not one piece of art but many hundreds of pieces of art every day. The raw foods come to us in bags, baskets, or cases; the cooked foods in cans; the meat, raw; the seafood in need of cleaning, and also the poultry—certainly not attractive.

The most important part of producing fine food for your customers (I use that word to cover everyone who partakes of your food—patients, personnel, nurses, doctors, and so on) is in giving your kitchen workers not only the feeling that their work is a great art, but that it is a far greater art than any other. It *is* greater because everyone eats three meals a day and the scope is so broad that everyone is interested in what he eats.

I am convinced that until you have given your staff down to the last vegetable preparer the feeling that his or her work is an art and important to the finished product, you will not get the best results in the beautiful, delicious food you wish to produce. It is worth your while a thousand times over to take time when new employees are beginning to explain and talk about what you expect and why and how.

[1] Presented before the Dietetic Section Meeting, 15th Annual Conference of the Tri-State Hospital Association (Maryland, District of Columbia, and Delaware Hospital Associations) in Washington, D. C., on November 7, 1955.

But you can't stop there! You must continually encourage, compliment, or show workers how they can improve the taste or appearance of food until they themselves begin to be the critics and can improve on what you have taught them. It is a never-ending game from which you and your customers will reap great benefits.

Equipment Maintenance

The finished product on the tray or counter is the end result, but don't forget the indirect art that is necessary. What about the care of the tools of our trade? Do you understand and teach or have someone teach the care of all your valuable machinery, the slicing and chopping machines, beaters, peelers, grills, French fryers, dish machines, and so on? Do your workers know how to sharpen a knife? How many times I have stepped into a station to show a salad or sandwich maker or even a cook how to do some simple trick and found that it could not be done because the knife was dull! Attractive food cannot be produced unless your staff has the right tools, understands what those tools can do when in good condition, and knows how to keep them in good condition.

Menu Making

Now we are ready to write interesting menus, and the kitchen staff is anxious to go to work on producing and styling the attractive food for the customers.

You need no help in writing well balanced menus, using all seasonable foods available. But did you think about color in your vegetables and fruits? Are the vegetables the right ones to complement the meats? Is there a good variety of desserts, including fresh as well as canned fruits? How recently have you served any of the same items? Will the salads appeal to those who do not want meat and vegetables, and are they of sufficient size to be adequate? Do you have two sizes of soup bowls so that the people who enjoy a larger bowl of your good nourishing soup may have it with maybe a sandwich and dessert for luncheon?

Most people select their food with their eyes as much as with the thought of taste. Have you visualized how the patient's tray or the cafeteria counter will look? Will it be a beautiful picture of tasty, well-garnished food? Do you know how many of each item you sold the last time it was on your menu, so that you will have no left-over problems? Nothing is more discouraging to the kitchen staff than left-overs.

My business is department store restaurants, where we have five price lines for the various restaurants. In each price line, we have a repertoire of all food listed by categories, such as all soups, all salads, sandwiches, vegetables, desserts, and so on. Each kind of meat is a separate list—that is, the various methods of cooking beef are listed separately from the same kind of lists for pork, veal, lamb, poultry, and seafood.

Then, there is a miscellaneous list of meat extenders and meat substitutes. This is really the backbone of our menu making, the "bible" we call it. There is an unwritten law that every week each supervisor must add at least one new item to this repertoire. If one proves to be a popular item, we keep it; if not, it is discarded. If she can add more than one a week, so much the better. It gives your employees preparing food a lift to use a new recipe, and you will find competition spreading in their wondering which part of the kitchen is to be so honored each week. Talk about it, have everyone taste it, get their opinion of it. Most workers want to have a part in the new things going on around them. If it came out of a magazine with a colored picture, show it to them as well as giving them the recipe on a card. It's just part of the game in the art of producing food.

Your repertoire will never let you down if you use it and constantly increase its size. When you feel so stale and making menus seems a dreaded task that must be done, just open the "bible," and there are all the new and old friends before your eyes to give you the help you need. Making menus is a very important part of your art.

Sources of Ideas

We are fortunate today to have so much color photography of food. Practically every magazine has beautiful color pictures of food with interesting garnishes. I never pick one up that I don't get new ideas. True, some of this color photography is in advertising, but the idea is there for you to use. The sesame seed pie crust, which came from a commercial contest last year, is wonderful for Dutch apple pie. It gives a nutty flavor.

Besides the entertaining consumer publications, there are the trade magazines, *Restaurant Management*, *The American Restaurant Magazine*, *Inplant Food Management*, *Institutional Feeding and Housing*, *Institutions*. The utility companies will send you free their publications. Newspapers are another good source for ideas in new and better ways of serving food.

If you are alert to just a part of these sources and keep them in a file, you will have more ideas than you can use. Take cranberries as an example. You can make a delicious bread using your own favorite nut bread recipe and substituting chopped cranberries for the nuts, or by cutting down on the nuts and using some chopped cranberries with the nuts. What about cranberry biscuits or muffins? Why not make cranberry relish to serve with your turkey? It is cheaper than the canned jelly and has such a delightful fresh flavor. It will keep under refrigeration for several weeks.

Tired menus are a loathsome thing. Work to make them exciting, fresh, and different. Styling of food is an individual thing as much so as designing a dress or building a house or painting a picture. Again I say your work is the greatest of all creative arts because you reach all classes—rich and poor, sick and well. Not one of you would be willing to copy the exact style of menu-making or food production that someone else has done any more than we would be willing to buy a dress or hat just like a friend's. Style means being a little different . . . a special garnish . . . a dash of some special seasoning or flavor. There are literally thousands of ideas at your fingertips to pick and choose from and to create your very own style. I haven't even mentioned all the interesting cook books available.

Acceptance of Food

How do you appraise the acceptance of your style and food by your customers? First, encourage constructive criticism. Let them help you with ideas. If they say why can't we, or why don't we have so and so, put on your best smile and ask them if they have a favorite recipe for it. If you play up to them, they will be "eating out of your hand" in no time. Stroll around the dining room or into the patients' rooms, especially the hard-to-please patients. Encourage them to tell you what they like or don't like. It makes them feel important. Remember, your art is one that everyone knows about because he eats three meals a day.

Another good source for me to judge the acceptance and appraisal of our food is the soiled dish table. If the plates are not fairly clean, then go to the steam table and check by tasting the items of food that are not being eaten. Then check the size of the portions being served. Nine times out of ten, either the food isn't right or the portions are too large. The majority of people eat what they are paying for. It is a mistake to neglect the soiled dish table, if you really are interested in the acceptance of your food.

What about getting a little color into your tray service? If ever an attractive tray should be set up, it is the tray that goes to the hospital patient. Must we always use white napkins and aluminum or dark brown plastic trays? There is a new fiberglass tray made in the most beautiful colors with a steel edge imbedded in the fiberglass which strengthens the edge and does not break like the plastic tray. It is gay, and in the center is even embedded a lacy design which looks like a paper doily. This would be used without a place mat under the dishes.

If you must use conventional trays, why not a gay colored paper mat under the plate? They are less expensive than the laundering of a cloth mat. Hospitals now use colored coats for doctors and nurses. Why not colored napkins? If you use a linen supply house, ask them about colored napkins of the same quality cloth the next time they buy new ones. There are excellent fast color materials available which are no more expensive than white materials. What can you do to get your purchasing agent to buy yellow or pink or blue tea and coffee pots instead of the perennial brown and green ones? The lighter colors cost only a few cents more and the ivory one costs exactly the same.

When I first started in this great business of producing food thirty-seven years ago, there was no color photography, there were no trade magazines, there were no trade or professional associations, there were few cook books, there were no ice machines, there was no frozen food, there was no eviscerated poultry, there was not a mix of any kind, lettuce was hard to get in winter, there were no radishes or parsley or tomatoes in winter. Yet it has always been fun, and each day has been a great new adventure with new customers, new ideas, and a feeling of giving a service to others.

Patients' Menu Committee

Unique opportunities for nutrition education exist in many institutions where the patients or residents are hospitalized for more than a few days. An effective scheme in one of the tuberculosis hospitals of the New York State Department of Health has been the formation of a "Patients' Menu Committee." A committee of two young men and two young women patients, selected by the occupational therapist, met with me to plan a week's hospital menus. Each of us had a blank menu-planner, so that all could readily see how the menu developed.

Opportunities for nutrition teaching continually arose. The committee became keenly interested in the "why" of certain foods. Complications, such as equipment not available, personnel not on duty, and produce not delivered were new ideas to them in connection with the end result—meals served. The four were surprised, too, when they realized that even among themselves no one menu was completely acceptable.

The menu planning was tape-recorded the next day with the discussion condensed to 1 hr., but with nutrition emphasis retained. Later, it was broadcast over the hospital intercommunicating system. The menus were served the following week. Despite the normal "ribbing" that was forthcoming, there seemed to be unusually good acceptance of the meals by the majority of the patients that week. As to time involved, it really did not take any longer than when I struggled alone with menus.—*Ellen B. Guernsey, Senior Nutritionist, New York State Department of Health, writing in* Nutrition News (*published by National Dairy Council, Chicago*) *19: 7 (Dec.), 1955*

Book Reviews

The Foreseeable Future. By Sir George Thomson. New York: The Cambridge University Press, 1955. Cloth. Pp. 166. Price $2.50.

Forecasting the future with plausible possibilities provides more than enjoyable reading. Sir George Thomson, a Nobel prizewinner in 1937, predicts new applications for energy and power, transport and communications, and meteorology. He devotes a separate chapter to new developments in food production and "manufacture," and then concludes with thoughts on the social consequences.

In the chapter on food, he not only considers the possibilities of increasing efficiency in the production of crops and developing lands not now under cultivation, he also entertains the possibilities of "manufactured" food. However, he realistically limits this to fats and possibly sugars —"simple" foods. Beefsteaks, he predicts, will remain difficult if not impossible to "synthesize." On the other hand, he suggests that animal food may become more available to mankind than in the past by development of "rations" that are more nutritious and efficient to produce than wheat and corn. Experiments on Chlorella, an algae containing approximately 50 per cent protein, and on yeast which is also about 50 per cent protein make this more than a dream. Antelope and bear he suggests might well be used to extend the range and variety of meat.

This is just a taste of some of the exciting ideas which this author has to suggest. His book is highly recommended reading matter.

Peptic Ulcer. Diagnosis and Treatment. By Clifford J. Barborka, M.D., and E. Clinton Texter, Jr., M.D. Boston: Little, Brown and Company, 1955. Cloth. Pp. 290. Price $7.

This book is a comprehensive review of the entire subject of peptic ulcer. It is designed as a handbook for the practicing physician, but it should also serve as a good reference book for therapeutic and teaching dietitians and for college instructors in diet therapy.

In the section on "Dietary Management," the principles of the diet therapy are discussed and detailed explanation of the various stages of the diet are given as well as lists of foods allowed and those to be avoided. These lists suffer in that they are not all-inclusive. It is noted that while one food is omitted, a similar food is included. This tends to restrict the diet unduly. Dietary management in hemorrhage is also discussed. Although one may not agree with every detail of the diet, it is essentially the bland diet regimen accepted at the present time as the best known diet therapy for peptic ulcer. It is gratifying to see so liberal a dietary regimen proposed. However, it is to be regretted that the term "bland diet" was not used, in line with the nomenclature which has been proposed for describing diets.

One wonders why the diets given are measured in grams as well as the more common and easily used household measurements. One also wonders why the Lenhartz diet is resurrected in such detail and why a few recipes are included. It should be pointed out, too, that all the sample menus in the appendix do not follow the suggested plan in the text in including a citrus fruit each day.—*Doris Johnson, Ph.D., Director of Dietetics, Grace-New Haven Community Hospital, New Haven, Connecticut.*

How to Reduce Surely and Safely. By Herbert Pollack, M.D., with Arthur D. Morse. New York: McGraw-Hill Book Company, Inc., 1955. Cloth. Pp. 158. Price $2.95.

In this book, Dr. Pollack has discussed common fallacies regarding foods and drugs used as "reducing aids." This alone merits reading by would-be reducers who are susceptible to spell-binders with wonder foods and drugs to sell.

Sound information is given on menu planning with protective foods. The only discordant notes are to be found in some of the recipes containing mineral oil and the extensive lists of high caloric foods which, if used in the 800-calorie menus he suggests, would surely result in important nutritive deficits.

A Family Budget Standard. By The Budget Standard Service. New York: Research Department, Welfare and Health Council of New York City, 1955. Paper. Pp. 62. Price $1.

This booklet presents a revised and up-to-date family budget standard for use of welfare and health services in the city of New York. It will be of special interest to those nutritionists and home economists who provide budgetary services for agencies.

Cooperatively developed by personnel from a variety of agencies, the standard may be interpreted and adapted to fit the specific requirements of individual agencies. The principal uses for which it is intended are: (a) to provide current reference materials on family living costs, typical requirements, retail prices, and related data; (b) to provide a basis for establishing equitable fee scales consistent with ability to pay for services rendered by public or voluntary welfare and health agencies; (c) to determine eligibility for free services; (d) to facilitate counseling on family financial management; and (e) to provide budget material for in-service staff training programs.

Much of the material for the report is drawn from the *City Worker's Family Budget 1946–51*, developed by the Bureau of Labor Statistics, U. S. Department of Labor. Content is presented in three parts. Part I gives background material on a concept of the budget standard, a description of the present budget standard and its relation to earlier standards, differences related to family size and composition, and living costs in relation to family income. Part II covers the major categories of expenditure; the methods used to develop the standard for each category; quantity and quality specifications for items priced; and the cost schedules for age, sex, activity groups, and for families of varying sizes. Part III is devoted to cost summaries. Included is a useful schedule of the estimated costs of the budget standard for eight representative family types; a one-page summary of costs for easy use in planning budgets for individuals or families of any size or type; and a short form for quick computation of the total weekly costs of goods and services by type of family.

The comprehensive list of reference materials on each category of the budget should prove helpful to those concerned with the problem of family living costs.

It is evident that a tremendous amount of work and skill has gone into the development of this sound technical guidance tool. It is sure to be a widely used reference manual, especially among professional workers in the field of health and welfare, everywhere.—*Dorothy L. Bovee, Food and Nutrition Consultant, American National Red Cross, Washington, D. C.*

RECENTLY RECEIVED

Allergy Cooking. By Marion L. Conrad. New York: Thomas Y. Crowell Company, 1955. Cloth. Pp. 380. Price $5.

Current Literature

Contributed by Janette C. Carlsen and Ethel M. Miller, The Johns Hopkins Hospital, Baltimore; and the Journal staff

AMERICAN JOURNAL OF MEDICINE

Vol. 19, December, 1955

Seminar on carbohydrate metabolism:

* Evolution of modified insulins in the treatment of diabetes mellitus, with special emphasis on insulin-zinc suspensions. R. G. Sprague and R. A. Kilby.—p. 925.
* The problem of degenerative vascular disease in diabetes. H. T. Ricketts.—p. 933.

Modified Insulins. In the past fifteen years there has been increasing appreciation of the fact that insulins with timing characteristics intermediate between those of soluble insulin and protamine zinc insulin provide excellent replacement therapy for the great majority of patients who require insulin. These preparations include NPH globin insulin and appropriate mixtures of soluble insulin and protamine zinc insulin. First reaction to the introduction of a new insulin-zinc suspension is likely to emphasize the confusion resulting from the availability of additional insulins. However, it is likely that the new preparations, by virtue of their freedom from modifying proteins and their probable adaptability to the needs of almost all diabetic patients, may eventually substitute for and replace all of the existing preparations except regular and crystalline insulin. Observations on one hundred consecutive patients with diabetes mellitus treated with lente insulin are presented. With the introduction of the insulin-zinc suspensions, it is difficult to conceive of any field of injectable modified insulins, short of an "automatic" insulin whose rate of release from the sight of injection would be determined by the level of the blood sugar. We know of no prospect for the development of such an insulin in the foreseeable future.

Degenerative Vascular Disease in Diabetes. Diabetes, or some factor related to it, markedly hastens the onset and increases the frequency and severity of arterial and arteriolar sclerosis. It also gives rise to capillary lesions of the renal glomeruli and retina that belong almost exclusively to the diabetic state. Rates of death and disability from these causes are increasing as diabetic patients live longer. Diabetes increases susceptibility to atherosclerosis to a greater extent in women than in men, and the former have a higher incidence of intercapillary glomerulosclerosis but not of retinopathy. Duration of diabetes stands out as the most important single factor in vascular disease, and its effects are greater in younger than in older persons. The parts played by severity and control of diabetes are still in dispute. Inconsistencies in relation to control lend support to the concept, as yet incapable of proof, that hereditary tendencies may be as important as diabetes itself. The experimental production of both glomerular and retinal lesions with cortisone and corticoptropin strengthens the possibility that they have a common pathogenesis in man and raises the question of whether their clinical occurrence is related to adrenal hyperactivity. Evidence on this point is contradictory. Mucopolysaccharides are increased in the blood of diabetic patients with vascular, especially renal, disease but to some extent in those without it and may be related to the pathogenesis of retinopathy and intercapillary glomerulosclerosis. The etiology and pathogenesis of diabetic vascular disease remain obscure.

THE AMERICAN JOURNAL OF NURSING

Vol. 56, January, 1956

* If you ask me—about helping patients accept low sodium diets.—68.

Low-Sodium Diet. Three nurses and a dietitian tell the ways they help patients accept a long continued, low-sodium diet which the doctor prescribes. The importance of explaining the need for the low-sodium diet to the patient is stressed, and means by which the diet can be made palatable and attractive are discussed.

AMERICAN JOURNAL OF PHYSIOLOGY

Vol. 183, November, 1955

* Central and sensory control of food intake in genetically obese mice. J. L. Fuller and G. A. Jacoby, Jr.—p. 279.
* Effect of food restriction on body composition of hereditary obese mice. L. G. Alonso and T. H. Maren.—p. 284.

Control of Food Intake in Obese Mice. Genetically obese mice are less able than their normal siblings to adjust food intake adaptively when their diet is diluted with cellulose, made bitter, or enriched by fat. The difference between genotypes is attributed to differential response of the nervous system to signals arising from biologic need rather than to differential food preference. The syndrome is very similar psychophysiologically to hypothalmic obesity in the rat.

Food Restriction in Obese Mice. Long-term restriction of food in genetically obese mice decreases weight gain in growing mice and decreases absolute weight in the adult. This weight deficit is partitioned between fat, protein, and water. Although the restricted obese mice had less fat than their unrestricted obese siblings, they still maintained body fat concentrations two to four times as great as their lean siblings who received 1.3 to 2.7 times as much food. Unrestricted obese mice have normal total body protein (grams per animal). Restricted obese mice lose protein in proportion to their diminished intake. Absolute depletion of protein (grams per animal) was 25 per cent and 42 per cent for two schedules in which intake was decreased, respectively, 46 per cent and 74 per cent. The obese mice had a lower percentage of body water than their lean siblings, but higher absolute water content. Fasting induced absolute loss of water, along with the losses of fat and protein. These studies suggest that hereditary obese mice have a quantitatively different metabolism than their lean siblings, in the direction of greater storage of fat per unit of ingested food.

THE BRITISH JOURNAL OF NUTRITION

Vol. 9, No. 4, 1955

* Long-term individual dietary surveys. G. M. Chappell.—p. 323.
* The metabolism of nitrogen, calcium and phosphorus in human adults on a poor vegetarian diet containing ragi (*Eleusine coracana*). V. Subrahmanyan, M. Narayanarao, G. Ramarao, and M. Swaminathan.—p. 350.
* The intakes of essential amino-acids of children who were deriving most of their protein from bread and vegetables. B. P. Hughes.—p. 373.

Long-Term Individual Dietary Surveys. To estimate average intake, the duration of any survey should be sufficient to reflect normal dietary and preferably the effect of seasonal influence. Reasonably accurate measurement of intake should be obtained if the subject weighs and records diets carefully and recipes are procured for composite cooked dishes or if dishes are made from weighed ingredients. In a study with two surveys, a thirty-four-year-old woman and sixty-six-year-old man were the subjects. The woman's survey lasted 70 weeks, divided into two periods of 61 and 9 weeks, while the man's survey lasted 13 weeks. The weekly intake of calories and nutrients showed considerable variations differing with dietary components and with the subjects. Estimates of the mean daily intake of the woman, based on one week sampled at random, had standard errors of 8 to 15 per cent for most dietary components. Since there is no reason to think that her dietary habits were particularly variable, this suggests that the results of a short-term survey should be interpreted with caution. The advantage of taking observations for a single period longer than one week appear to be small if an estimate of average nutrient intake over a year is required. A more accurate estimate will be obtained from a number of one-week periods covering the year.

Metabolism on a Poor Vegetarian Diet Containing Ragi. Ragi and other

millets are generally considered coarse as compared to rice which, when cooked, is very soft. Ragi is an important grain in the dietary of millions who inhabit the Deccan Plateau of India. It is very high in calcium content. The nutritive value of a poor vegetarian diet containing ragi is higher than that of diets containing rice or kaffir corn and almost equal to a wheat diet. In a study with eight healthy adult males on a ragi diet, all subjects maintained a positive nitrogen balance, even though fecal nitrogen excretion was very high. The apparent digestibility of the dietary proteins was about 50 per cent. The mean loss of calcium in feces was very high and accounted for about 90 per cent of the ingested calcium. Absorption of phosphorus was about 25 per cent of the daily intake.

Essential Amino-Acid Intakes of Children. The essential amino-acid intake of children in two German orphanages who thrived on diets consisting largely of bread and vegetables has been calculated and compared with the intake of children on a diet much richer in animal protein. The diets low in animal protein provided somewhat less of most of these amino acids but, with the exception of methionine, provided double the amounts required for nitrogen equilibrium in the adult. Minimum amino acid requirements of children for normal growth are not known, and any conclusions about the adequacy of a diet derived from a comparison with adult needs must be treated with reserve. However, since these German children grew rapidly and improved in health, their amino acid requirements must presumably have been satisfied by the protein foods they were eating, and these were chiefly plant foods. Adequate nutrition of children thus appears to be possible without the need to consume large quantities of animal protein. The information about the amounts of the essential amino acids provided by these diets may help to establish the requirements for satisfactory growth.

BRITISH MEDICAL JOURNAL

No. 4949, November 12, 1955

* Some problems in the management of the aged. I. D. Grant—p. 1181.

No. 4951, November 26, 1955

* Diabetic amyotrophy. H. Garland.—p. 1287.
* Paratyphoid fever associated with Chinese frozen whole egg. K. W. Newell, B. C. Hobbs, and E. J. G. Wallace.—p. 1296.

No. 4952, December 3, 1955

* Comparison of milk and soya beans in the treatment of kwashiorkor in Uganda. M. D. Thompson.—p. 1366.

Management of the Aged. A review of 120 patients over seventy years of age had led to the conclusion that elderly people with acute abdominal emergency conditions withstand surgery remarkably well, despite chronic lesions elsewhere, provided there is no undue delay in reaching surgery and that the minimal intervention necessary is carried out quickly. Age itself has no effect on the mortality rate, and in cases of doubt, it is usually safer to operate than to observe. For many old people, the zest of eating is one of their chief remaining pleasures, and it is disappointing to have to tell them that an excess of food gives them no extra energy and indeed, unduly taxes their digestive powers. A diet giving 1800 to 2000 calories is ample, and the aged should always be warned that obesity is a menace. For those in good health, an ordinary mixed diet is all that is needed, with perhaps the addition of extra sugar or sweets to restore flagging energy. The moderate use of alcohol in the aged apparently does no harm, and a little wine "for the stomach's sake" will assist the secretion of lagging digestive juices, while the nightcap may often relieve anxiety and induce sleep. Other environmental factors are also discussed.

Diabetic Amyotrophy. Twelve patients are described who showed a syndrome which includes weakness and wasting of muscles with tendon areflexia, all associated with frank diabetes or at least with impaired glucose tolerance. There was evidence that some of these cases resulted from a myelopathy and that changes may occur at any cord level, though they are most commonly seen in the lumbar region. Pain of similar distribution to the amyotrophy is a frequent though not constant feature. The protein content of the cerebrospinal fluid may be normal or raised. Affected muscles always show electromyographic changes, though of varying character. At present, "diabetic amyotrophy" would appear to be the best term to apply to the syndrome, which is the result of uncontrolled diabetes and is probably always reversible by full diabetic control.

Paratyphoid Fever. Two outbreaks of paratyphoid fever due to *Salmonella paratyphi* B phage type 3a are described. The infection was due to the eating of cakes filled with a proprietary imitation cream used in two bakeries. The same phage type of paratyphoid bacillus was found in cans of Chinese frozen whole egg used in the bakeries, in some members of the staff, and in the patients. It is suggested that the imitation cream was contaminated within the bakery by *Salmonella paratyphi* B from the frozen whole egg. The dangers of the use of a contaminated product in a bakery are discussed.

Kwashiorkor. An attempt has been made to compare the effects of milk and soya protein in the treatment of children with kwashiorkor in Uganda. Milk feedings prepared from reconstituted nonfat dry milk solids were given to thirty-five children, preceded or reinforced with calcium caseinate in a few cases. A daily protein intake of 2.5 gm. per kilogram body weight was found necessary. Most children would take more than this, but diarrhea was a troublesome complication in some of those fed on skim milk. Feedings prepared from soya beans were difficult to administer and had to be abandoned in one-third of the forty-two children started on this diet. In the remainder, daily protein intake was adequate, though limited to 1.5 to 2 gm. per kilogram body weight in the majority. At this level, the only significant difference between the two forms of treatment lay in the longer time taken to overcome anorexia with soya than with milk. Soya alone was as effective as when supplements of vitamin B_{12} or methionine were added. It is suggested that milk products should continue to be used for treatment. For prevention, education is the first essential. Much could be done to improve the supply and use of naturally occurring protein sources.

THE CANADIAN MEDICAL ASSOCIATION JOURNAL

Vol. 73, December 15, 1955

* Treatment of the nephrotic syndrome in children. C. P. Rance and A. L. Chute.—p. 959.

Nephrotic Syndrome in Children. The clinical course of the nephrotic syndrome in children has been briefly presented. A low-sodium, normal protein diet is advised. In the presence of severe edema, the sodium intake should be as low as possible. This can be achieved by avoiding sodium-containing foods, using salt-free bread and butter, and Lonalac in place of milk. Eighty-eight nephrotic children were treated with ACTH and cortisone. Seventy-four per cent of the edematous children lost their edema; when non-edematous children with proteinuria were treated, a like percentage showed clearing of the urine. Poor results were obtained when hormone treatment was given for less than eight days; best results followed courses of twelve days or longer.

FOOD RESEARCH

Vol. 20, November–December, 1955

* Variation in flavor judgments in a group situation. D. Foster, C. Pratt, and N. Schwartz.—p. 539.
* Crop, light intensity, soil pH, and minor element effects on the yield and vitamin content of turnip greens. J. F. Eheart, R. W. Young, P. H. Massey, Jr., and J. R. Havis.—p. 575.
* Studies on enzymatic tenderization of meat. I. Basic technique and histological observations of enzymatic action. H. Wang and N. Maynard.—p. 587.
* The effect of water impurities on the flavor of brewed coffee. E. E. Lockhart and M. C. Merritt.—p. 598.
* Studies on tenderness of beef. II. Varying storage times and conditions. P. C. Paul and L. J. Bratzler.—p. 626.

Flavor Judgments in a Group Situation. This experiment was made to illustrate some of the shortcomings of round-table group testing methods. It confirmed the thought that observers in a round-table can be influenced by the response of the first observer. It also demonstrated that round-table judging can create qualitative flavor differences and preferences where none exist. Some of the drawbacks to this type of testing panel may be overcome by well-trained and sophisticated panels, but this in no way detracts from the dangers inherent in the round-table situation.

Factors Affecting Vitamins and Yield of Turnip Greens. Factors affecting the vitamin content of turnip greens usually cause composition changes of considerable nutritional importance. In this study, plantings were made in the spring and fall of 1950, 1951, and 1952 to determine the effect of crops,

soil *pH*, light intensity, and minor elements and their interactions on the nutritive value and yield. Because of crop failures, only the plantings of the spring and fall of 1950 and fall 1952 were used. The area was fertilized annually. Yield was highest in the fall crop of 1950 and lowest in the 1952 fall crop; highest in high *pH* plots and in the plots to which minor elements were applied to the soil. Ascorbic acid content was highest in the 1950 spring crop and lowest in the fall crop of 1950. Carotene content decreased with high light intensity. Thiamine increased slightly when minor elements were applied and considerably with a combination of high light intensity and low soil *pH*. Riboflavin content increased to a small degree with high light and more with a combination of high light and minor elements.

Enzymatic Tenderization of Meat. The results of this study showed that two proteolytic enzymes, one a papain preparation and the other of fungal origin, had very similar effects as meat tenderizers. The meats tested were ½-in. pork chops, beef ribeye steaks, and raw beef outside round. Both enzymes attacked muscle fiber protein, nuclei of muscle fibers, and cells located in the endomysia, but were inactive to collagenous and elastic fibers. The chops and steaks contained about 3 per cent residual moisture and were capable of rehydrating back to 70 per cent or more water content in 5 to 15 min. All meats were frozen, and all experiments were at room temperatures. No attempt was made to control the *pH* at which the reactions were carried out.

Water Impurities and Coffee Flavor. The sixteen chemical components reported present in water supplies—silica, iron, manganese, calcium, magnesium, sodium, potassium, carbonate, bicarbonate, sulphate, chloride, fluoride, nitrate, dissolved solids, calcium carbonate hardness, and noncarbonate hardness—were added individually and in combinations to distilled water to test their effects on coffee flavor. There was no differentiation when water containing them at threshold levels was used. Differences in taste occurred with higher concentration of ions. Inorganic components of water should not affect the taste of coffee except for areas such as Sarasota, where sulphate and sodium concentrations are high or Galveston, where there is a large chloride deposit in the water.

Beef Tenderness and Storage. Prime, Good, and Commercial grade beef animals were used to study the effects of various cold storage and freezing treatments on cooking time, cooking losses, and tenderness of steaks fried in deep fat. Frozen steaks required longer cooking and had higher cooking losses. Those cooked without thawing had the highest cooking time and losses. Anterior portion steaks tended to cook faster and had lower cooking losses than posterior pieces. Increased periods of cold storage increased tenderness. Handling, such as removal from the carcass before or during storage or cutting of the muscle on the carcass, interfered with the tenderizing process. Additional cold storage after three days again increased tenderness. Normal, on-carcass cold storage of seven to nine days after slaughter tended to minimize the variations of tenderness, which were more pronounced in lower grade beef. The high correlation between cooking time and cooking losses indicated that cooking loss is a resultant of the time required to cook the meat.

FOOD TECHNOLOGY

Vol. 10, January, 1956

* The effect of cooling and freezing procedures on consumer acceptability factors of turkey meat. J. V. Spencer, W. E. Matson, W. J. Stadelman, and M. C. Ahrens.—p. 16.
* Effect of freezing conditions on appearance of frozen turkeys. A. A. Klose and M. F. Pool.—p. 34.
* Uses of Gelsoy in prepared food products. E. F. Glabe, P. F. Goldman, P. W. Anderson, L. A. Finn, and A. K. Smith.—p. 51.

Effects of Cooling and Freezing on Acceptability of Turkey Meat. Turkey fryers, young hens, young toms, and mature hens were processed by subscald procedure. They were divided at random for four cooling treatments which were: ice water, drained snow ice, air at 34°F., and no cooling. All were packaged in polyethylene bags with a cooling period of 16 to 20 hr. duration. Freezing temperatures were 0°F., −20°F., and −40°F. Turkeys cooled in ice water had a better appearance, had a net gain in weight during cooling and freezing but lost the most weight during thawing and cooking. Compared with turkeys of other cooling treatments involving a 16-hr. cooling they were equally tender. Those placed in freezers without a prior cooling period tended to be somewhat less tender than precooled turkeys. The appearance of the birds was influenced by the freezing rate. Generally, the lower the freezing temperature, the better was the appearance of the bird. This effect was much more evident on the turkey fryers and young toms than on young or mature hens.

Effect of Freezing Conditions on Appearance of Frozen Turkeys. Production and processing trends have altered the inherent appearance of freshly dressed birds and have imposed stricter requirements for freezing in order to obtain acceptable and optimum frozen appearance. There has been a trend toward marketing immature (fryer-roaster) turkeys with thin, darker-appearing skin due to lack of subcutaneous and intracutaneous fat. The trend to use of higher (140°F.) scalding temperatures results in the removal of the outer skin layer and exposure of a darker surface which is much more susceptible to darkening and dehydration. In a study of the factors essential for production of optimum frozen appearance in poultry processed by current practices, no appreciable differences in the appearance of the ice-chilled and those frozen immediately from the warm eviscerated state were noted. The thawed appearance is different from the slow-frozen appearance, but none was considered superior or more appealing.

Gelsoy in Prepared Food Products. Gelsoy is the name given to a water-soluble proteinaceous product isolated from defatted soybean meal. It is yellowish, soluble in water to about 50 per cent concentration at 77°F., and has a foaming and whipping capacity. The water-soluble protein content of Gelsoy, and its capacity, under certain conditions, to hold ten times its weight of water suggested its utilization in sausage-type meats for prevention of water and fat separation. In an experiment with frankfurters, it appeared to act as a water-binding material similar to nonfat dry milk solids. The combination of sodium hexametaphosphate with Gelsoy increased the efficiency as a water- and fat-binding agent. The same results appeared in tests with meat loaf. In canned meats, the sodium hexametaphosphate does not improve the binding properties of Gelsoy. Tests with frozen confections, such as frozen custard, showed that Gelsoy-mixed confections had superior texture and flavor when compared to confections made with liquid premixes.

JOURNAL OF THE AMERICAN GERIATRICS SOCIETY

Vol. 3, November, 1955

* Treatment of primary hypertension in the older age group. J. Schott.—p. 910.
* The use of vitamin therapy to reverse certain concomitants of aging. W. Kaufman.—p. 927.

Treatment of Hypertension in the Aged. Diet is important in the treatment of hypertension in the older age group. Sometimes prescribed diets do not receive patient's cooperation because of distaste, because of inconvenience in preparation, or because they include unaccustomed foods. Low-calorie and restrictive diets are the two generally prescribed. Low-calorie diets are regulated according to the patient's weight. The physical inactivity of the elderly makes it even more important that caloric intake be limited. Vitamin and mineral supplements must be provided. Restrictive diets are low-sodium or low-protein diets or a combination of both. The low-sodium diet should provide a sodium intake of about 200 mg. daily. The modified low-sodium regimen consists of saltless cooking, no table salting of food, no eating of salted foods, and possibly using salt-free bread and milk. Although satisfactory for cases of mild hypertension, it usually exceeds 500 mg. and is of little value in severe cases. The low-protein diet is not widely publicized or accepted. Its major indication is hypertension with impaired renal function and nitrogen retention.

Vitamin Therapy to Reverse Concomitants of Aging. Continuous oral administration of large amounts of properly selected vitamins for prolonged periods to persons eating a diet containing adequate protein and calories does much to alter favorably the concomitants of aging. Vitamin therapy chosen properly can improve joint mobility, muscular working capacity and strength, disequilibrium, capillary strength, and certain mental syndromes. Vitamins

used in doses which are in excess of quantities received from regularly prepared food may be considered to act as pharmocologic agents. Prolonged oral administration of niacinamide but not niacin can effect changes in bodily function and structure of the elderly who subsist on a diet adequate in calories and protein.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Vol. 159, December 17, 1955

Salmonella organisms in meat. Foreign Letters—England.—p. 1564.

* Albumin-globulin ratio. Queries and Minor Notes.—p. 1579.

Volume 159, December 31, 1955

* Antibiotic-resistant organisms in cheese. Foreign Letters—Canada.—p. 1788.

* Water and milk supplies for travelers. Queries and Minor Notes.—p. 1802.

Feeding problem child. Queries and Minor Notes.—p. 1804.

Eating active yeast daily. Queries and Minor Notes.—p. 1804.

Volume 160, January 7, 1956

* Study of children drinking fluoridated and non-fluoridated water. E. R. Schlesinger, D. E. Overton, and H. C. Chase.—p. 21.

* "Moth-ball" potatoes. Foreign Letters—England.—p. 74.

Albumin-Globulin Ratio. The albumin-globulin ratio of the blood is the relation between the number of grams of albumin to the number of grams of globulin per 100 ml. blood serum. The serum albumin may vary from 3.0 to 4.5 gm. and the total serum globulin from 2.6 to 3.8 gm. per 100 ml. The ratio between the two elements is disturbed when either component is increased or decreased. In kidney diseases with proteinuria, for example, consisting predominantly of albumin, the albumin fraction of the blood is relatively decreased so the albumin-globulin ratio of the serum falls.

Antibiotic-Resistant Organisms in Cheese. Micrococcus and Streptococcus organisms were isolated from 100 specimens of cheese which were purchased in retail stores to determine their resistance to antibiotics. It was found that commonest resistances were to penicillin and dihydrostreptomycin, the two antibiotics most commonly administered to cattle to control mastitis. No less than 15 per cent of the micrococcis and 67 per cent of streptococcic cultures were resistant to penicillin. Food contaminated with such organisms may well be contributing to the severity of the problem of human infections with resistant strains of Micrococcus and Streptococcus organisms.

Water and Milk for Travelers. If pasteurized milk is not available, canned whole, condensed, evaporated, or powdered milk can be reconstituted by the addition of boiled water. The simplest procedure not involving chemical treatment with water is to boil all the water used for drinking, washing, bathing, brushing teeth, and laundry. Laundry is frequently overlooked, and in some unsanitary areas may be a source for cutaneous or systemic or gastrointestinal infections. For drinking water, tetraglycine hydroiodide has been effective in destroying cysts of *Endamoeba histolytica*. Water purification tablets (globaline) are widely used. Vinegar and potassium permanganate are frequently used to wash leafy vegetables in certain tropical areas, but there is no reliable assurance that such treatment will prevent infection.

Fluoridated and Non-fluoridated Water. Children who had been exposed to fluoridated drinking water for about eight years and those exposed to essentially fluoride-free water for about eight years were used in this study, to determine whether any irritative effects on the kidneys followed long-term ingestion of the fluoridated water. Refined techniques of urine analysis were used, and no limitations were placed on the physical activity prior to collection of the 12-hr. specimens. The differences tended to favor the fluoridated water, thus adding more weight to the safe use of fluoridated water as a public health measure for prevention of dental caries.

"Moth-Ball" Potatoes. Wholesome potatoes which had been planted in fields treated with certain insecticides were examined. On cooking, some had the naphthalene flavor. The flavor could also be attributed to the chemical spraying of seed potatoes to prevent their sprouting.

THE JOURNAL OF BIOLOGICAL CHEMISTRY

Vol. 217, December, 1955

* A metabolic lesion in dietary necrotic liver degeneration. S. S. Chernick, J. G. Moe, G. P. Rodnan, and K. Schwarz.—p. 829.

* The amino acid requirements of man. XV. The valine requirements; summary and final observations. W. C. Rose, R. L. Wixom, H. B. Lockhart, and G. F. Lambert.—p. 987.

* The amino acid requirements of man. XVI. The role of the nitrogen intake. W. C. Rose and R. L. Wixom.—p. 997.

Metabolic Lesion in Dietary Necrotic Liver Degeneration. Dietary necrotic liver degeneration is recognized now as a distinct disease entity; it is a deficiency of complex nature, which, so far, has been produced in rats, mice, rabbits, and pigs. In most animals, the first attack is fatal. Three distinct dietary factors have been identified as protective against this, namely, cystine, vitamin E, and Factor 3. Any one of these chemically different substances affords protection by itself. Slices from livers of rats fed a vitamin E-free *Torula* yeast diet, which produces dietary necrotic liver degeneration, failed to maintain their initially normal respiratory rate, while liver slices from control rats respired for 2 to 3 hr. without appreciable decline in rate of oxygen uptake. Vitamin E, cystine, and Factor 3 also prevented the occurrence of metabolic defect in liver slices. Factor 3 preparations were observed to give parallel protection against metabolic lesion as to necrosis activity.

Valine Requirements. The valine requirement, as measured by the nitrogen balance technique, has been determined in five normal young men. Tests showed that L-valine possesses twice the activity of the racemic compound, and that D-valine is devoid of measurable influence on the state of the nitrogen balance. No correlation was detected between the valine needs of the subjects and their body weights, surfaces, or creatinine outputs. In formulating diets designed to exclude amino acid deficiencies, allowance should be made for the possibility that individuals other than those tested may have still higher needs. Experiments with diets devoid of histidine or arginine have failed to confirm reports that a deficiency of histidine leads to an increase in the urinary output of indoxyl compounds, and that the absence of arginine adversely affects spermatogenesis.

Role of Nitrogen Intake. To ascertain the approximate amount of nitrogen required for the synthesis of the non-essential amino acids when the diet furnishes the eight essentials, experiments were conducted on normal young men. The efficiency of the nitrogen present in the mixture, in which the proportion of each component was adjusted to the needs of the organism, was remarkable. Such a preparation, when suitably supplemented with extra nitrogen (glycine) to provide a total daily intake of 3.5 gm., was sufficient to maintain nitrogen equilibrium. Assuming that 0.35 gm. unknown nitrogen, as contaminants of starch and other dietary constituents, was utilizable, one may calculate that the minimal nitrogenous needs of a man for the synthesis of the non-essential amino acids does not exceed 2.55 gm. daily.

JOURNAL OF HOME ECONOMICS

Vol. 48, January, 1956

* Cooking rice for school lunches. O. M. Batcher, K. F. Helmintoller, and E. H. Dawson.—p. 36.

Cooking Rice. In the cooking procedures outlined here, long- and medium-grain white rice and a parboiled, long-grain variety are cooked in 3-lb. quantities by three methods of heating: by covered stockpot on direct heat, covered baking pan in 350°F. oven; open steam table pan in a steamer at 5 lb. pressure. The rice, water proportions, and cooking time for each method vary. In each method, rice, salt, and oil (if used) are added to boiling water, stirred, and cooked in covered or uncovered containers as specified. The rice then stands 5 to 10 min. before serving. The culinary properties of the three kinds of rice differ; the formula for the stockpot method produces a firm yet tender, dry, flaky rice with each grain standing out separately. Rice cooked by the oven and steamer methods is tender and slightly moist with the grains firm enough to hold their shape. If a softer white rice is desired with the stockpot method, the amount of water can be increased 1 cup per pound of rice and the cooking time increased.

THE JOURNAL OF NUTRITION

Volume 57, November, 1955

* Bone healing in lysine-deficient rats. R. Haggar, T. D. Kinney, and N. Kaufman.—p. 305.

* Ascorbic acid nutriture in the human. II. Content of ascorbic acid in the white cells and sera of subjects receiving controlled low intakes of the vita-

THE CASE OF THE VANISHING *banana nut loaf!*

In a popular bake shop in St. Louis, they make a Banana Nut Loaf so delicious it vanishes from the counter as soon as it appears. Customers wait in line for it, and the disappointment of late-comers who find their favorite "sold out" is evident.

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- 2 lbs. sifted, all-purpose Flour
- 2½ Tablesp. Baking Powder
- 2 teasp. Baking Soda
- 2 teasp. Salt
- 3 oz. *Instant* Pet Nonfat Dry Milk

Mix with an electric mixer at medium speed until light and fluffy:
- ⅔ lb. Shortening
- 1⅓ lbs. Sugar
- 7 oz. Eggs

Add to egg mixture and beat until well blended:
- 2⅔ lbs. fully ripe, peeled Bananas, broken into pieces
- 1⅓ cups Water
- 4 teasp. Vinegar

Mix in dry ingredients thoroughly and:
- ½ lb. chopped, unsalted Nuts

Put into 4 greased 9x5x3-in. loaf pans. Bake in 350 oven (moderate) for 1 hr., or until bread pulls from sides of pans. Remove from oven and at once invert pans on the back of a shallow pan. Let bread cool before removing from pans.

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min. B. F. Steele, R. L. Liner, Z. H. Pierce, and H. H. Williams.—p. 361.

The digestion of acetylated monoglycerides and of triglycerides. D. C. Herting, S. R. Ames, M. Koukides, and P. L. Harris.—p. 369.

* Further observations on the improvement of polished rice with protein and amino acid supplements. P. D. Deshpande, A. E. Harper, F. Quiros-Perez, and C. A. Elvehjem.—p. 415.

* Effect of high dietary manganese on hemoglobin formation. R. H. Hartman, G. Matrone, and G. H. Wise.—p. 429.

* The effect of chronic inanition and frequency of food ingestion on the dental caries experience in the rat. J. C. Muhler.—p. 441.

Bone-Healing in Lysine-Deficient Rats. Lysine has been proved indispensable for the growth of young rats and for maintenance of body weight in the adult rat, and it is also needed for maintenance of normal weight in the dog. In man, a deficiency causes a negative nitrogen balance within a few days. In this study, young male rats were divided into four groups. The first three received, respectively, in *ad lib* amounts the following diets: basal, lysine-free diet; the basal diet containing 1 per cent lysine, and the basal diet containing 3 per cent lysine. The fourth group, the starvation controls, received the basal diet plus 1 per cent lysine, but in restricted amounts so that their weight loss paralleled that of the group receiving the lysine-free basal diet. Retarded epiphyseal growth resulted from lysine deficiency and starvation, but there was no appreciable interference in bone-healing. The effects of the deficiency were similar to those occurring with restricted food intake and included steady weight loss, retarded skeletal and visceral growth, and atrophy of subcutaneous fat and muscles. Increased dietary lysine had no effect on growth or bone healing.

Ascorbic Acid Nutriture. A diet low in ascorbic acid was given to 13 adults for 78 days. When the subjects had been partially depleted of the vitamin, after 38 to 42 days, they were given enough pure ascorbic acid so that each one had in succession, three levels of intake: 20, 30, and 40 mg. The ascorbic acid content of white cells and sera was determined at frequent intervals. When the intake was 40 mg. per day for 7 to 11 days, ascorbic acid content of the white cells and sera showed a significant increase over the amount when the subjects were given an intake of 30 mg. for 11 to 14 days. There was some evidence that levels of ascorbic acid nutriture affected the response to the varying amounts of the vitamin.

Protein Supplements for Polished Rice. In a study made with six groups of rats, the rice diet supplemented with 6 per cent of various animal proteins supported an excellent rate of growth and maintained liver fat at normal levels. Several amino acids were needed to give similar results. In short experiments, retardation in growth was prevented by increasing the levels of leucine, isoleucine, valine, and histidine. The growth-retarding effect of additional lysine disappeared in longer experiments. Amino acid supplementation where one or more of leucine, isoleucine, valine, and histidine was omitted resulted in retarded growth. The sequence in which amino acids of polished rice became limiting was found to differ from that calculated from analyses. The results of the study suggest that the most practical way of improving the nutritive value of rice diets is by supplementation with foods containing nutritionally well balanced proteins.

Dietary Manganese and Hemoglobin Formation. The effects of manganese on hemoglobin formation were investigated. One study was conducted with lambs restricted to a fortified milk diet and the other with lambs fed a roughage diet. The milk was fortified with iron, copper, cobalt, and vitamins A and D and supplemented with various levels of manganese. Levels ranged from 45 p.p.m. which caused a decrease in concentration of hemoglobin and serum iron to 5000 p.p.m. which was associated with decreased iron in the liver, spleen, and kidney. Three levels of manganese supplemented the second diet. The levels were 0, 1000, and 2000 p.p.m. Hemoglobin regeneration was markedly retarded and serum iron depressed in lambs fed the 1000 or 2000 p.p.m. manganese. It is concluded that manganese interferes with iron absorption rather than with hematopoiesis.

Food Restriction and Dental Caries. Dental caries production in rats is intimately related to the ingestion of a coarsely ground corn or rice diet. This study was made to find the effect of chronic inanition as well as that of

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frequent food ingestion on dental caries in rats receiving a diet known to induce a moderate number of caries. It was found that the number of caries was dependent in a large measure on the amount of food eaten. When the cariogenic diet was restricted to 60 per cent of the food eaten, there was approximately 80 per cent less caries; when it was restricted 40 per cent, there was approximately 90 per cent less caries.

THE JOURNAL OF SCHOOL HEALTH

Vol. 25, December 1955

* Measuring the growth characteristics of school children. H. V. Meredith.—p. 267.

Measuring the Growth Characteristics of Children. In selecting norms for evaluating the growth characteristics of children, school health workers should choose norms that will describe and screen rather than appraise. Health education and services find norms that supply descriptive information on growth status and progress most effective. School health workers should also choose norms that will portray in correct perspective their pupils' growth characteristics. Norms meeting these criteria give a frame of reference for each pupil, providing a personal physical growth record and resource material for his health education teacher and bringing deviations in growth status to the attention of health personnel.

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THE LANCET

No. 269, November 26, 1955

* Serum-cholesterol, diet, and coronary heart-disease. B. Bronte-Stewart, A. Keys and J. F. Brock.—p. 1103.

Serum-Cholesterol, Diet, and Coronary Heart Disease. A study was made of the bodily characteristics, serum cholesterol and serum lipoprotein levels, diet, and personal habits of 364 men, aged 40 to 58, residing in South Africa. These men were selected as being reasonably representative of three racial groups—Bantu, Cape Colored, and European—which differ strikingly in the prevalence of coronary heart disease. Highly significant differences in the mean total-cholesterol level, and particularly in the cholesterol level in the β-lipoprotein fraction of the serum, were found when the men were classified according to their racial origin. The Bantu lay at one extreme and the Europeans at the other. The Cape Coloreds were between. There are large differences between these racial groups as regards their average diets, particularly the consumption of fat. Fat consumption of the Europeans is more than twice that of the Bantu, with the Colored group intermediate. Further subdivision within these three racial groups on the basis of income revealed that with an increase in income from subgroup to subgroup, two consistent and parallel trends emerged: (a) an increase of the mean total cholesterol in the serum and particularly of the β-lipoprotein fraction; (b) an increase in the consumption of food containing fat, particularly animal fat. At any given income level, the mean level of animal fat consumption and the mean levels of total cholesterol and of β-lipoprotein cholesterol were much the same. The results of this survey support the hypothesis that the dietary intake of fat influences the level of the serum cholesterol, particularly that in the β-lipoproteins, and in turn may be one of the major factors influencing the pathogenesis of coronary heart disease.

NEW YORK STATE JOURNAL OF MEDICINE

Vol. 55, December 1, 1955

* Lysine supplementation in infant feeding. Dosage considerations. A. A. Albanese, R. A. Higgons, G. M. Hyde, and L. Orto.—p. 3453.

Lysine Supplements in Infant Feeding. A study was undertaken to define a convenient and practical dosage for supplemental lysine in infant feeding. Twelve infants (one week to fourteen months of age) were observed. Initially, ten of these infants presented appetite problems and were poorly nourished in terms of body weight, while two were of average weight and appetite. All were fed evaporated or fresh milk formulas and complementary foods. Three- to five-week periods of lysine supplementation were preceded and followed by control periods of three to seven weeks' duration. Supplemental L-lysine, contained in a vitamin-mineral mixture,

Meat...

and the Value of Fat in Nutrition

Authorities in the field of nutrition no longer consider fat as an optional component of the diet. Evidence from the laboratory and bedside indicates that fat in small amounts may be looked upon as an obligatory constituent of a health-promoting diet.[1]

The far-reaching value of fat in nutrition has been amply demonstrated in laboratory animals in its pronounced effect on growth, on pregnancy and lactation, on nitrogen-sparing action, on work capacity, on time of sexual maturity, on the period of survival during fasting, and on ability to combat external stresses.[1]

Young animals fed a fat-free diet not only fail to grow normally, but develop hair and skin changes characteristic of "essential" fatty acid deficiency.[2] Fatty acids other than the "essential" fatty acids also appear to be necessary for optimal health. Animals fed "essential" fatty acids but no others do not grow optimally.

The value of fat in human nutrition was emphasized in a recent study[2] comprising 200 patients incapable of receiving adequate nourishment. For periods of 1 to 30 days, these patients were given supplementary fat alimentation by vein in the form of fat emulsion containing "essential" as well as other fatty acids. The result was typically a marked increase in weight and more positive nitrogen and potassium balances.

Meat, recognized for its high content of biologically valuable protein, B vitamins, and essential minerals, provides, in addition, substantial amounts of nutritionally important fat.

1. Deuel, H. J., Jr.: Newer Concepts of the Role of Fats and of the Essential Fatty Acids in the Diet, Food Res. *20*:81 (Jan.-Feb.) 1955.

2. Meng, H. C.: Preparation, Utilization, and Importance of Neutral Fat Emulsion in Intravenous Alimentation, in Najjar, V. A.: Fat Metabolism, Baltimore, The Johns Hopkins Press, 1954, pp. 69-92.

The nutritional statements in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

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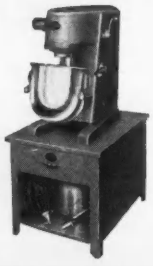

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was added to the formulas, usually in daily amounts of 250 mg. for infants weighing 10 lb. or less and 500 mg. for infants over 10 lb. An identical vitamin-mineral mixture (without lysine) was added to formulas during control periods. Nine of the ten nutritionally substandard infants exhibited moderate to striking increases in body weight and improvement in appetite during the periods of supplementation. In the two adequately nourished infants, the effect on body weight was less pronounced.

NURSING OUTLOOK

Vol. 3, December, 1955
* New attitudes toward obesity. J. Mayer—p. 640.

New Attitudes Toward Obesity. Little is known about the causes and mechanism of obesity in man, while more is known about animals. Experimental studies with animals show that a number of different genes probably working by different mechanisms lead to obesity. Hormonal factors, not known precisely, are implicated. Neutral, enzymatic, and humoral factors may also be involved. Certain diets will influence certain types of experimental obesity toward a greater rate of weight accumulation while they will cause spontaneous reduction of weight in other types. Some diets will interact by themselves with a certain genetic background to lead a strain of animals to overeating and obesity while leaving other strains unaffected. Exercise plays a role of different importance in different obesity syndromes. Fat metabolism differs in its most essential characteristics in different types of obesity, and certain chemicals will cause weight loss in some specific types of obesity, while leaving others unaffected. We can say safely that if intake is decreased and activity increased, the individual will lose fat.

NUTRITION ABSTRACTS AND REVIEWS

Vol. 25, October, 1955
* The physiological basis of obesity and leanness. Part II. J. Mayer.—p. 871.

Physiologic Basis of Obesity and Leanness. Generalizations and deceptively simple solutions have often been the rule in this field. It is a medical problem, not a moral issue. Blind application of height-weight tables is unscientific. Inducements to lose weight through mortality and morbidity propaganda and misinformation are dangerous. Obesity, it has been shown, runs in families with genetic as well as environmental factors involved. Studies of identical and fraternal twins have shown that food habits are not the main factor. It is important to prevent the development of obesity in susceptible children. Obesity is most malignant when the onset is early. Strenuous exercise on an irregular basis in untrained persons is not advocated. Reorganization of living habits to include regular exercise adapted to the physical capacity is a sound preventive. Moderate exercise during weight reduction also helps in promoting nitrogen balance and muscle tone. Diet prescriptions should be adapted to the patient's rate of energy expenditure and rate of weight loss, giving nutrition education as well. Psychiatrists feel weight reduction attempts with some patients may be undesirable in the absence of complete physiologic and psychologic investigation.

NUTRITION REVIEWS

Vol. 13, December, 1955
* Human life studies. I. M. Hoobler—p. 353.

Human Life Studies. Physical, mental, and social development of the infant and child cannot follow a normal course without provision of a full measure of food that is adequate in quality and quantity to meet the biologic growth needs. These factors probably condition the productiveness and social development throughout the entire life cycle. As the science of nutrition evolved, growth in size of the body became one criterion for judging nutrition. As a result of their close relationship, the terms of growth and nutrition are often used synonymously, although this may not always be a correct usage.

SCIENCE

Vol. 122, November 25, 1955
* Dietary casein level and B-factor deficiencies produced by antagonists. H. Kaunitz, C. A. Slanetz, and R. E. Johnson.—p. 1017.

Vol. 123, January 6, 1956
* Serum cholesterol in men in basal and nonbasal states. A. Keys, J. T. Anderson, and O. Mickelsen.—p. 29.

Dietary Casein and B Deficiencies Produced by Antagonists. It is concluded that the thiamine requirements of rats increase with increasing dietary protein levels if the rigid exclusion of thiamine from the diet is associated with the use of pyrithiamine, which denies the animals the use of both thiamine stores and that produced by the intestinal flora. If these requirements have any relationship to the role of thiamine in enzyme systems and if pyrithiamine exerts no effect other than that of a thiamine antagonist, one must conclude that thiamine plays an important part not only in carbohydrate metabolism but also in protein metabolism. It is also stated that riboflavin-protein and pyridoxine-protein are mutually limiting factors. Pantothenic acid and protein are probably not mutually limiting factors.

Serum Cholesterol in Men in Basal and Nonbasal States. The difference in cholesterol concentration between basal and nonbasal blood drawn in the morning is so small that it may be neglected in most comparative studies, particularly if the nonbasal subjects are engaged in physical work.

ADULT LEADERSHIP

Vol. 4, January, 1956
* The role of the workshop leader. G. C. Gildine.—p. 12.

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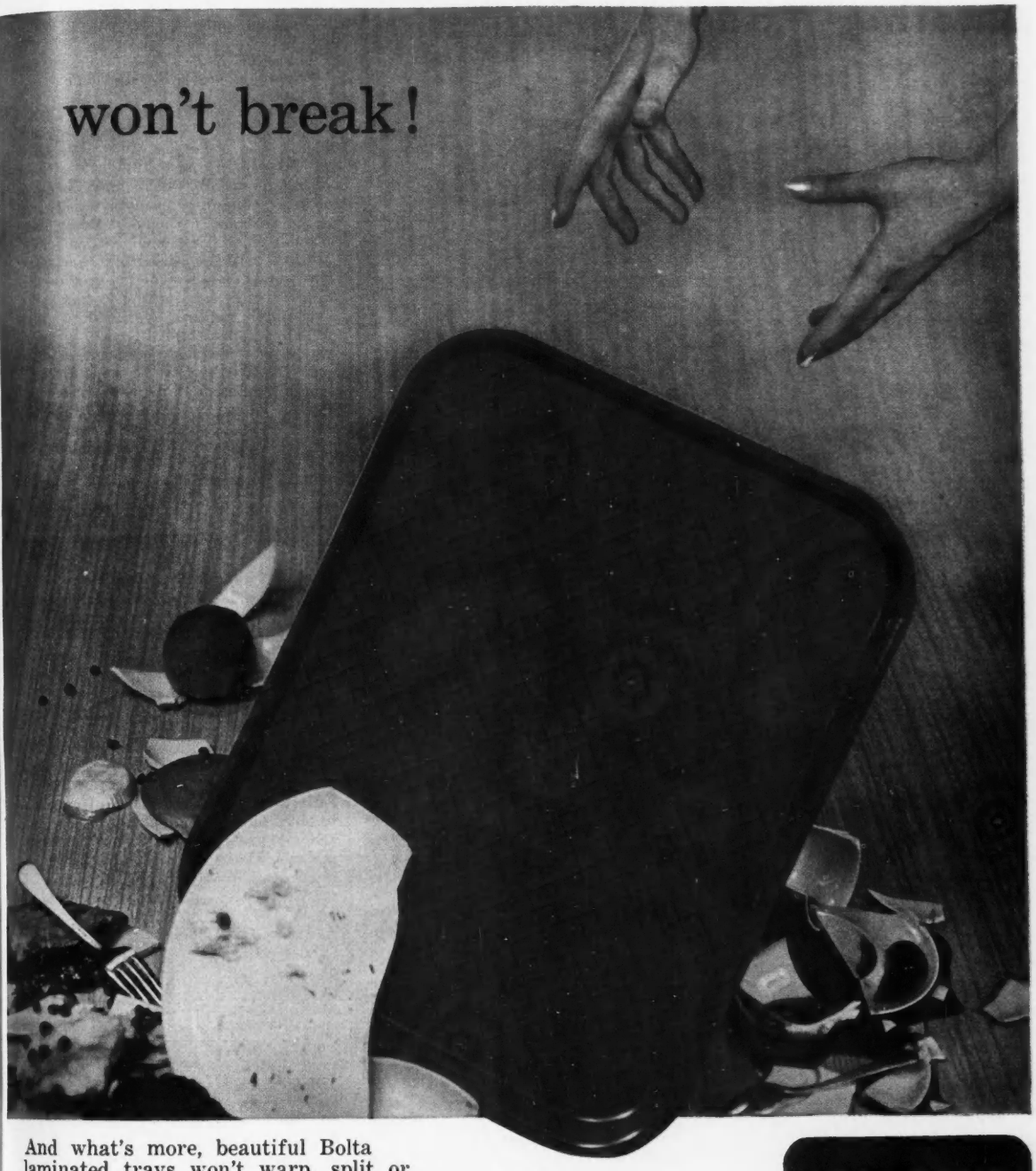

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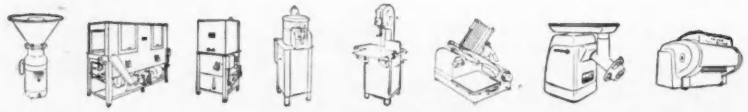

DISPOSERS DISHWASHERS PEELERS SAWS SLICERS CHOPPERS STEAK MACHINES

* Preludes to participation. H. S. Coffey and W. P. Golden, Jr.—p. 17.
First meeting. A. A. Liveright.—p. 20.
* Using resource people. P. Anderson.—p. 22.
* Back-home application. H. Kornbluh.—p. 24.

Workshop Leader. Good adult teaching fosters inner growth by providing the kind of outer situations which: support and stimulate without pushing; suggest ideas and resources without assigning; encourage self- and group-analysis without probing; and provide clarifying analysis and suggestion without dictating decisions. The workshop is designed to provide this kind of stage for learning. A successful workshop requires leadership with certain responsibilities: (a) It must establish a warmly, permissive climate of feeling. If the group is to attain high morale and strong intrinsic motivation, leaders must be people who live responsively, supportingly, honestly with themselves and others. (b) It must help participants learn to use the scientific process skillfully and habitually. (c) It must supply technical expertness. Participants need leaders who have broad knowledge in the technical fields involved in their workshop. (d) An effective workshop leader must be a person who deeply believes in the power of each individual to learn and grow at his own rate, who deeply enjoys working with others, and who feels most useful when he adds to the growth of others.

Preludes to Participation. The author describes the pre-workshop activities which get an institute off to a good start. He illustrates several essential points: the value of involving prospective members in pre-planning activities; the desirability of attempting to obtain information about specific and concrete problems from the participants; and mental attitude of the delegates as a crucial factor in the success or failure of the workshop. A pre-workshop brochure which describes the learning process at the workshop as one calling for full participation, sharing of ideas and experiences, and the intelligent use of resources is suggested. The value of working out a list of "points for participants" is also suggested; such a list would stress inter-active communication; individual expression; value of adequate tools of specific incident or case history; necessity of a realistic approach to a problem and its solution: a clear evaluation of objectives, methods, and procedures; and determination to question the methods and procedures if the objectives are not achieved.

Resource People. When a workshop group feels the need for specialized information, resource people are called on to offer practical suggestions. To avoid pitfalls in selecting resource people, the author lists factors to be considered. In selecting resource people, be sure that they: are adaptable to varied groups: are accustomed to working with groups; have direct experience with the problems to be considered; have a positive attitude toward new ideas and constructive change; are skilled in the technique of human relations; are

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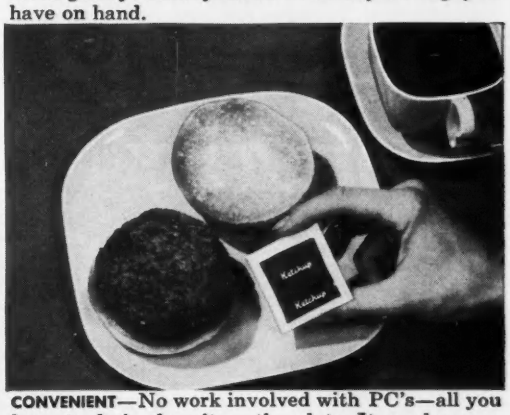

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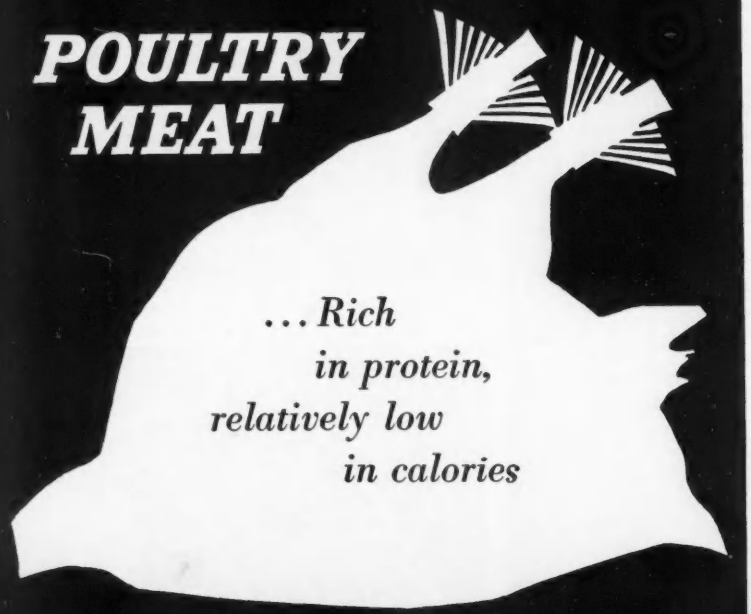

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sensitive to the pace of the group; are co-learners with the group. In using resource people, be sure that they can contribute something the group needs, such as: knowledge of a particular subject or program area; time-tested practices; unusual experiences; skills; research findings. Be sure that they are: previewed in action or checked through reliable sources for their ability as resource people; are briefed concerning their precise functions; are brought in when the group is ready for their assistance.

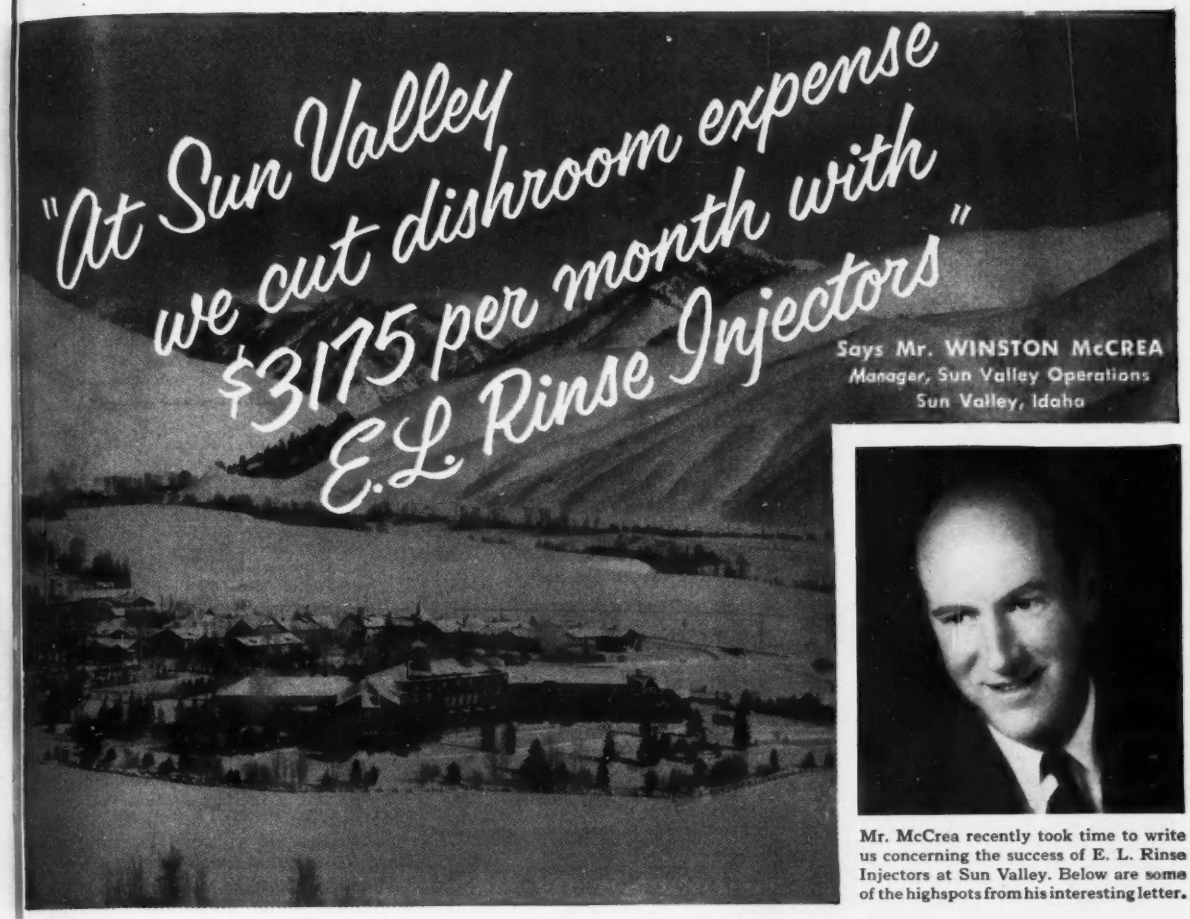
Back-Home Application. There are steps that can be taken to bridge the gap between workshop learning and the real problems at home. The degree to which back-home action will take place often depends heavily on what is done during the planning and recruiting stage. The recruiting publicity for training institutes and workshops should be specific. It should state what the training is for, what the participants will do at the workshop, and what they then will be able to do when they get back home. Generally, the training situation should accomplish the following to insure back-home application: (a) help give some insight into the problems to be handled and the job which needs to be done; (b) build confidence—develop skill; (c) help construct a practical plan of action for back-home use; (d) give some understanding of how to get started and how to carry through. There are various methods and aids which can be used to fulfill these needs, i.e., "live" projects, where the participants go into the field and learn through active participation; role playing, which has become one of the standard operating procedures of training sessions; demonstrations and movies depicting the job to be done. One of the last sessions at a workshop or training institute might well be devoted to a discussion within small groups of how to face the real problems back home. Follow-up conferences are often helpful because they allow the learning to "sink in." Also, application of learning has started and the practical problems in the home situation are much clearer.

COLLEGE AND UNIVERSITY BUSINESS

Vol. 20, January, 1956

* Food service director should do food buying. Sister F. Hugh.—p. 48.

Food Buying. If there is considerable loss in the efficiency of food purchasing, the remedy is to be found not in centralized purchasing for the whole institution but in training and education of the food service manager. By virtue of her position, she is best able to get a complete picture of the food operation from the vantage points of production, consumption, and cost accounting. When responsibility for meals and grocery bills are placed on one individual, she operates within a system of checks and balances calling for the most intelligent and effective purchasing possible. She has the opportunity of contacting her "public" daily to observe at first hand their satisfaction or dis-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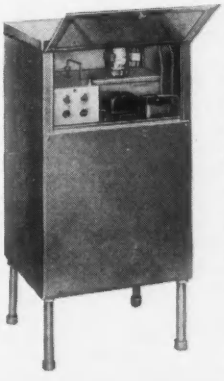

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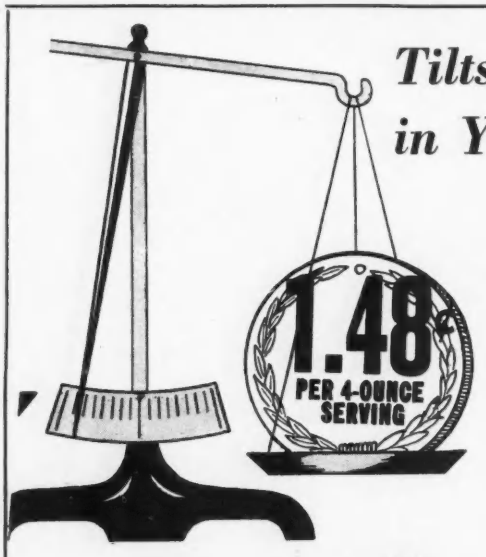

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satisfaction; this enables her to make evaluations that no one else is quite so well equipped to do. Because she controls the menus, she can supply what best suits the needs in a given case. Herein lie the determining factors in regard to the desired style, grade, and quality of foodstuffs. She is also in a position to know what is popular with students, and this also is reflected in determining the needs. The dietitian who is a food service director and purchaser is also well acquainted with storage space, inventory, equipment, and kitchen staff. The checking, placing, and moving of all food supplies is an important item in efficiency and can be best accomplished by one whose major interest is production and acceptance of meals which result in the most reasonable and approved expenditure of funds.

FOOD ENGINEERING

Vol. 27, December, 1955

* Big strides of dietetic foods. A. J. Finberg.—p. 70.

* Ole Sage episode; should "boom be lowered" on inept substitutes? I. C. Miller.—p. 113.

Vol. 28, January, 1956

* Antibiotic introduced as spoilage inhibitor for fresh poultry. W. H. Miller.—p. 43.

* Stopping storage off-flavors by curbing peroxidase. D. F. Farkas, S. A. Goldblith, and B. E. Proctor.—p. 52.

Dietetic Foods. Early dietetic foods performed their function by merely withholding the offending element. The result was a tasteless product of poor quality and texture which left an objectionable aftertaste. The move for more acceptable, better tasting products is being accomplished in many ways: (a) improved methods of formulation by use of palatable but non-metabolizable ingredients, such as Sucaryl; (b) substitution or increased use of other spices to make up for the lack of salt or sugar; (c) enhancement of natural flavor in meats, sauces, dressings, and some vegetables with monosodium glutamate; (d) use of salt substitutes; (e) use of various stabilizers to achieve familiar texture and consistency of non-dietetic food; and (f) appetite satients which may or may not be fortified with vitamins. Special problems of production and control of contents and labeling are discussed. Four major types of dietetic products are named (low calorie; diabetic; low-sodium; and bland), with specific listings of products packed without sugar or salt and those low in sodium, all of which are now available in large numbers.

Labor Relations. This is another episode in a special series of "cases" fictionalized to point out boss-worker problems. In this episode, the problem of inept substitutes causes Mike Brittle, a foreman, much unhappiness. He threatens to "lower the boom" on one Joe Spillut, but "Ole Sage" comes up with a wiser answer. He cites a similar case which eventually went to arbitration, and the arbitrator decided in favor of the worker. Ole Sage says that training is one answer to the problem—for every employee on every job—as is job rotation to familiarize more employees with more work assignments.

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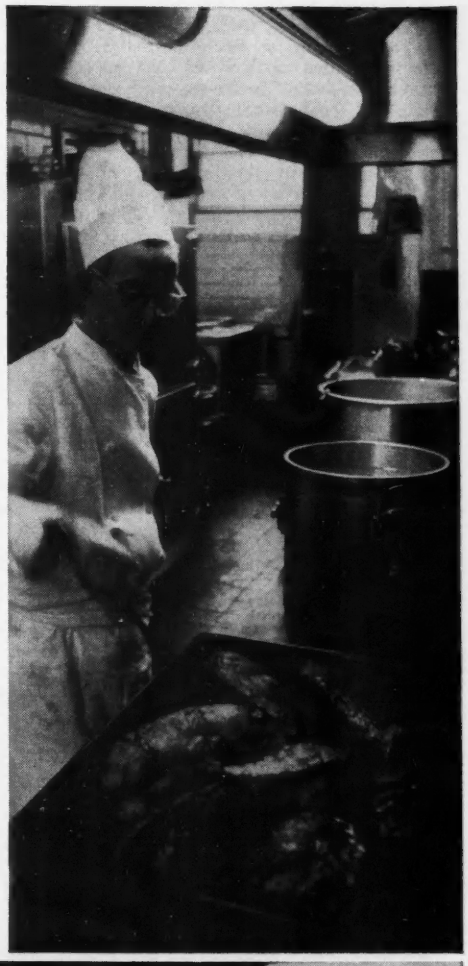

Newton College of the Sacred Heart, Newton, Massachusetts, is currently adding new buildings and facilities. One step in modernizing was to replace competitive cooking equipment with modern Gas equipment.

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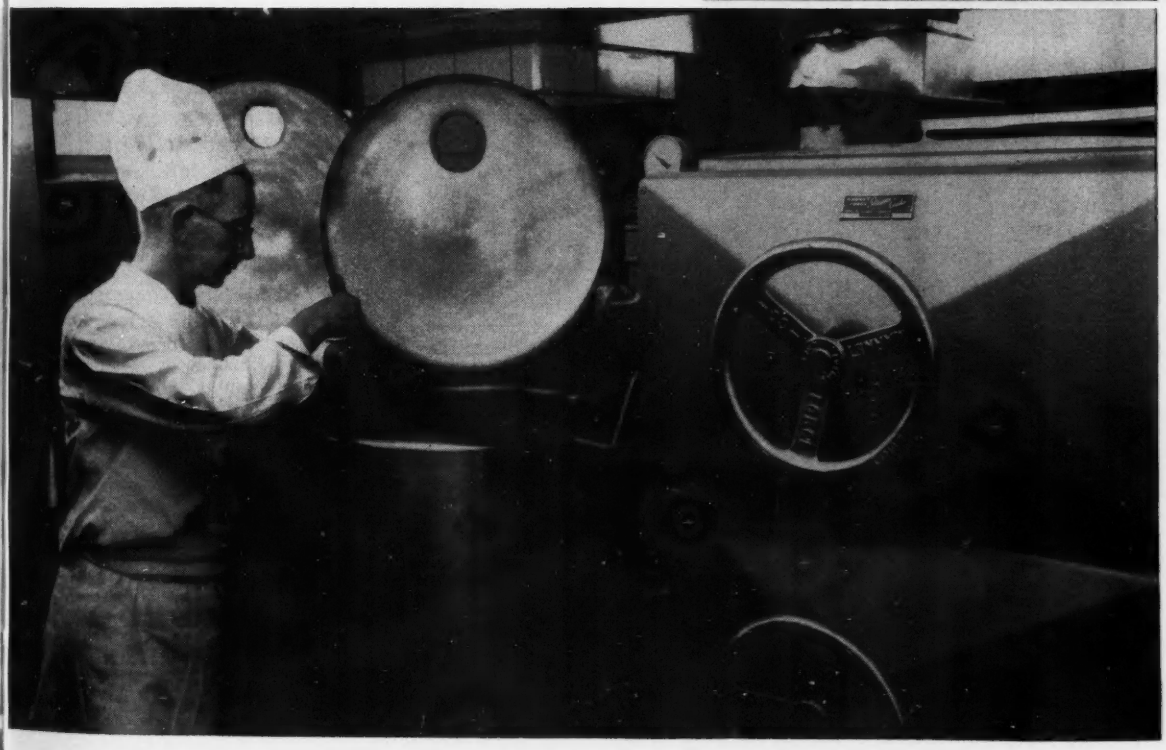
Chef Beauchamp also likes the versatility of Gas. Preparing food for 300 healthy girls each noon calls for many different temperatures for many different dishes . . . and with Gas, there's no valuable time lost for temperature recovery.

The Gas-fired, stainless steel equipment at Sacred Heart includes Vulcan ranges, fryers, and broilers; Savory toaster; 3-deck Blodgett oven; Vulcan Hart steam kettles; Market Forge steamer; Thermaduke dry table; and McDonald coffee urn.

For information on any institutional feeding problem, call your Gas Company commercial specialist and discuss the economies and results Gas and modern Gas equipment provide. *American Gas Association.*



Antibiotic Spoilage Inhibitor. In extensive field-trial work, antibiotics have retarded major bacterial action with fresh-killed poultry so that acceptable "in store" freshness has been maintained easily from two to three weeks. Tests are now proving antibiotics effective for beef and fish, and speculation runs to treatment of fresh fruits and vegetables and even whale meat. The author presents research data and tables which show that antibiotics "do the job."

Stopping Storage Off-Flavors. How off-flavors develop in storage of foods rich in peroxidase which are processed by high temperature-short time sterilization (HTST) has now been clarified. Heat-inactivation curves tell the story: a sharp drop in residual peroxidase activity is seen as heat-inactivation time and temperature increase. These findings are important to the canner because he is probably under-calculating his process time by not having a proper accounting of the heat resistance of the enzyme above 255° F.; these data will pinpoint the optimum HTST process for preventing enzyme regeneration, thus eliminating this type of canned-food spoilage.

HOSPITAL MANAGEMENT

Vol. 81, January, 1956

* Turkey portion control.—p. 97.

Turkey Portion Control. Three advantages of turkey utilization in hospitals are: (a) turkey can be served on any diet except those particularly prescribed for a special condition; (b) it is popular with most patients; and (c) portion costs are low; a properly cooked bird yields a high percentage of usable meat. Four methods of cooking turkey are described: roast-poaching; whole roasting; kitchen-pressed loaf; and turkey log, or boneless roll. Using the first method, boneless rolls and parts are placed tightly together in a shallow pan with the skin drawn securely around each roll. Four birds to an oven can be roasted by this method, and cooking time is about half that required for whole-roasting at the same temperature. Other parts are simmered in a kettle on top of the stove until tender. The abundance of sliceable meat obtained from this method gives an additional advantage for controlled slicing and weighing. Better portion control can be achieved also with whole-roasting turkey if correct carving procedures are followed. After removal from the carcass, sliceable meat should be chilled or "firmed-up" in the refrigerator for easier slicing. The third method of cookery, the kitchen-pressed loaf uses the meat which remains on the carcass after the sliceable meat has been removed. The warm meat is stripped from the bones, packed length-wise in alternate layers of white and dark meat, basted with stock, cooled to room temperature, and pressed. This mold is then chilled and sliced. The turkey log, or boneless roll, is a method of turkey cookery which achieves absolute portion control. Meat is rolled into loaves, secured by the natural skin, oven-roasted, and then easily sliced with no waste involved.

HOSPITALS

Vol. 30, January 1, 1956

* How to increase meat yields and decrease costs. C. D. Gullickson.—p. 58.

Vol. 30, January 16, 1956

* Five vital steps in food cost control. L. H. Kotschevar.—p. 60.

Increasing Meat Yields. A meat purchasing plan may be formulated by answering the following questions: (a) What portion of the budget is to be spent for meat? Approximately 33 per cent is about right. (b) How many meat meals are to be served? The proportion of high- to low-cost meat items should be established; the number of whole cuts and extender meat items determined; and a standard portion established. (c) What is the meat grade best suited to the menu item to be served? (d) What is the best weight tolerance for economy? Buy according to specific quantity purchase specifications. (e) Is the delivered product what was ordered? Check delivered product against quantity and quality specification listed on purchase order. Certain steps are necessary to determine an accurate meat estimate: (a) Plan a basic meat pattern for one month with a specified proportion of high- and low-cost items, whole cuts, and extender

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items. (b) Determine the number to be served. (c) Provide for "seconds"; determine proper size for each serving. (d) Keep current on variation in meal count (time of day patients are discharged, employee paydays, weather, attendance at noon and evening meal may all affect the count). (e) Consider complexity of meat to be purchased, the uses, servings per pound, and total portions available from the wholesale cuts. (The yield of a 27-lb., full-rib, when processed is shown in a table.) (f) Consult a standard portion guide and standardized recipes. (g) Study meat yields and the relationship to as purchased and edible portion costs. (h) Allow for shrinkage in storage and in cooking. (i) Determine if the maximum benefits are being realized by studying the AP and EP meat yields of each wholesale cut. Scrutiny of processing costs may also show that purchase of prefabricated cuts, shortening, and commercial soup stock may be more economical. A table showing yields from beef carcass and wholesale cuts with comparative costs, substituting prefabricated items, is included.

Food Cost Control. Menu construction in large measure decides what the food cost will be. The selective menu offers an opportunity for better cost control if it is carefully worked out. It is best to offer all low-cost entrées or all high priced items at one time, but if a low-cost entrée is listed first on a selective menu, it is apt to be selected. Recipe interpretation is a second vital step to food cost control. Review recipes to see if some of the new products of the market can be used to advantage. Frequently one can lower portion cost by using a less expensive ingredient or using a higher priced item but less of it. A third vital step in food cost control is purchasing. Price alone should never dictate purchases. A better quality and higher priced item may have a higher yield than a less expensive one. "Follow-through" in buying is important. Unless one observes and notes when an item does not give the proper yield or quality, one cannot later do a corrective type of buying. A fourth step is adequate food production management. First requisite is a file of standardized recipes which show total yield; number and size of portions; type of pan to use; cooking temperature; and total cost per portion and per recipe. Establish and post the number of portions of each menu item to be prepared, thus guarding against overproduction. Proper supervision in the kitchen is important also, for the entire cost control program depends on the planned serving portion. The last step in cost control is food cost accounting. Actual meal census figures should be obtained; daily raw food cost calculated from the invoices and storeroom requisition slips; and the average direct cost per meal obtained by dividing the total cost of the food served (raw food and labor) by the total number of meals served. The dietitian should then calculate percentage of raw food and labor cost to gross income for the day, and figure monthly operating statements with a complete summary of all direct and indirect costs for the food service operation.

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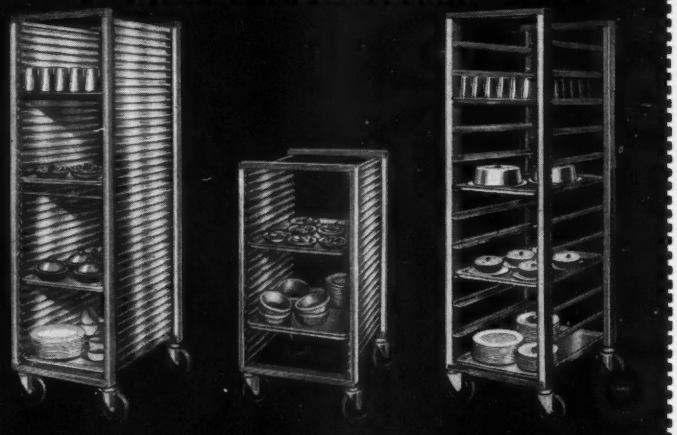

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THE HOTEL MONTHLY

Vol. 64, January, 1956
* Your menu can be a great selling medium.—p. 37.

Lamb on the Menu. The national average consumption of lamb in comparison with the total meat consumption is very low. Legs and chops are the easiest items to sell but they constitute only a small percentage of the carcass. If one confines himself to the purchase of choice sections of the carcass, cost necessarily is going to remain high, and menu prices will reflect these high prices. If an intelligent and profitable use can be made of the entire carcass, however, the over-all cost of lamb could be reduced substantially. The author shows an analysis of lamb consumption during a thirty-five-day period at a hotel coffee shop in which lamb was served in thirty-one different ways. Lamb salisbury steak or lamb hamburger was listed on the menu three times, and sold 548 orders on the three days, or an average of 183 orders per day. Baked lamb cutlet was listed once and sold 301 orders against breaded lamb cutlet which was listed four times and sold 256 orders, or 64 orders per day. A dish that is appealing to the eye and has an appealing aroma is the dish that creates customer satisfaction. It can be made

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from the rougher cuts of lamb and almost invariably yields a satisfactory profit margin. But if it isn't listed on the menu it cannot be converted into cash register action unless it has the proper billing on your menus.

INSTITUTIONAL FEEDING AND HOUSING

Vol. 6, January, 1956

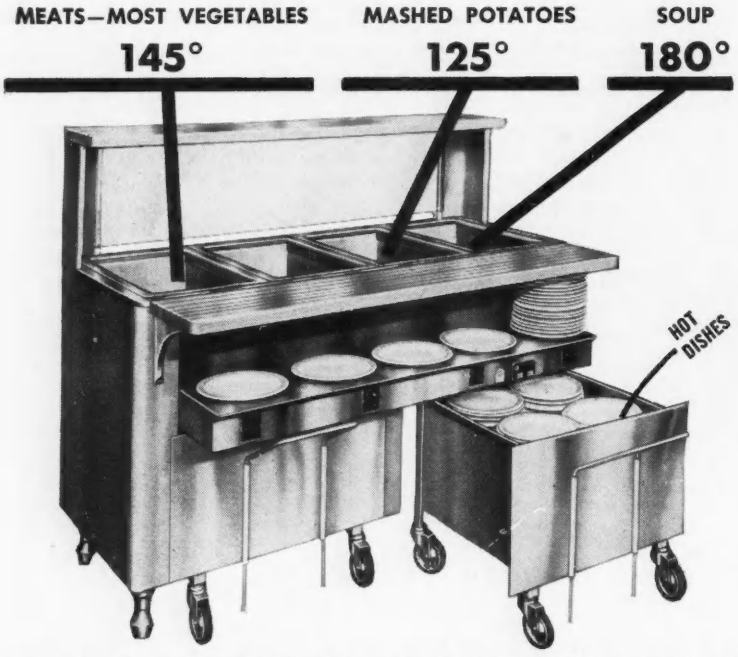
* How to buy fish.—p. 34.
* Maintenance of acoustical tile. E. S. Graybill.—p. 46.
* Inventory control: Part III. A. N. Califano.—p. 46.

Buying Fish. In purchasing fish, look for flesh which is firm, elastic, and not separated from the bone. Steaks and fillets should have no brown traces at the edges. The odor of fresh fish is mild; any objectionable "fishy" odor indicates staleness. Eyes should be bright and transparent, never cloudy, pink, or sunken. Gills should be red and free from slime; gill color fades with age to pink, gray, and finally becomes brownish or greenish. If fillets or steaks are wrapped, the wrapping should be of moisture-vaporproof material with no air space between fish and wrapping. Frozen fish of good quality have the following characteristics: Flesh should be solidly frozen, and there should be no discoloration or brownish cast to the skin. There should be little or no odor. Wrappings should be of a moistureproof material with little or no air-space between fish and wrapping. Whole or dressed frozen fish usually is not wrapped, but is covered with a glaze of ice to prevent it from drying out or from freezer burn. Knowing the various cuts of fresh and frozen fish is important in buying for quantity preparation, as the edible portion varies with the type of cut. Serving portions of fresh fish are generally based on ⅓ to ½ lb. edible part per person. When serving fish steaks, fillets, or sticks, use ⅓ lb. per serving; allow ½ lb. dressed fish per serving; use 1 lb. per serving when fish is purchased in the round or whole. When cooking fish, fat fish are best for baking, broiling, or planking. Lean fish is often preferred for boiling and steaming. Both fat and lean fish are suitable for frying. The most important thing to remember is that fish is too often overcooked. It should be cooked just enough to enable the flesh to be flaked easily from the bones.

Cleaning Acoustical Materials. Maintenance of sound-conditioning material should insure that the surface openings are not plugged up; otherwise, sound waves will be locked out. Ordinary dust and loose dirt can be taken care of by vacuum cleaning. Grease and grime present a problem, and different cleaning methods must be used with the various types of material. Directions for cleaning cellulose (wood) fiber tile, perforated metal pan, perforated asbestos sheet, and fissured mineral wood tiles are given. When refinishing acoustical materials, either water- or oil-base paint may be used, but care must be taken to avoid clogging the holes. Spray is better than brush painting because the spray provides a smooth, even coat which is thin enough that it does not clog the holes. Enamels can be used for perforated materials but must never be used on fissured tiles. Directions for both brush painting and spray painting are included.

Inventory Control. Good inventory control will benefit food department operations only if related closely to the purchasing, receiving, and issuing functions. Stocks of merchandise on hand should always be in balance with the daily needs of the food operation. Normally, a food operation purchases no more than three days' requirements of perishable food at a time. The normal staple order equals about a thirty-day supply. A normal food inventory is about one-third the monthly food cost. To control and check on deliveries, the receiving department should be located as close to the storage area as possible. A receiving record should be kept to show the date of delivery, the name of the vendor, a detailed record of the quantity received, and the price and amount of each commodity. The amount of direct issue should always be kept at an absolute minimum so that the daily food cost report will reflect accurately the cost of food consumed each day. Two tables which accompany this article show how the food dollar of a hotel or similar operation is spent and the average cost percentage of various classes of food for a restaurant with a 40 per cent food cost.

CAN YOU DO THIS WITH A STEAM-TABLE OR ANY OTHER FOOD WARMER?



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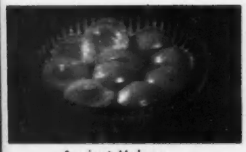
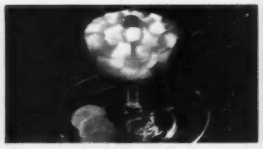
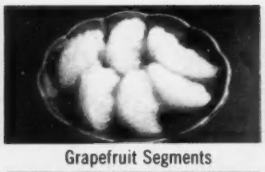

Apricot Halves


Fruit Cocktail


Grapefruit Segments

Bartlett Pear Halves

Cling Peach Halves

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Freestone Elberta Peach Halves

Freestone Elberta Peach Slices

Fancy Hawaiian Pineapple Tidbits

Fancy Hawaiian Sliced Pineapp

Sliced Carrots

Diced Carrots

Whole Kernel Corn

Cream Style Corn

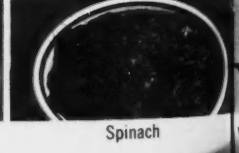
Lima Beans

Sweet Peas

Whole Beets

Sliced Beets

Whole Tomatoes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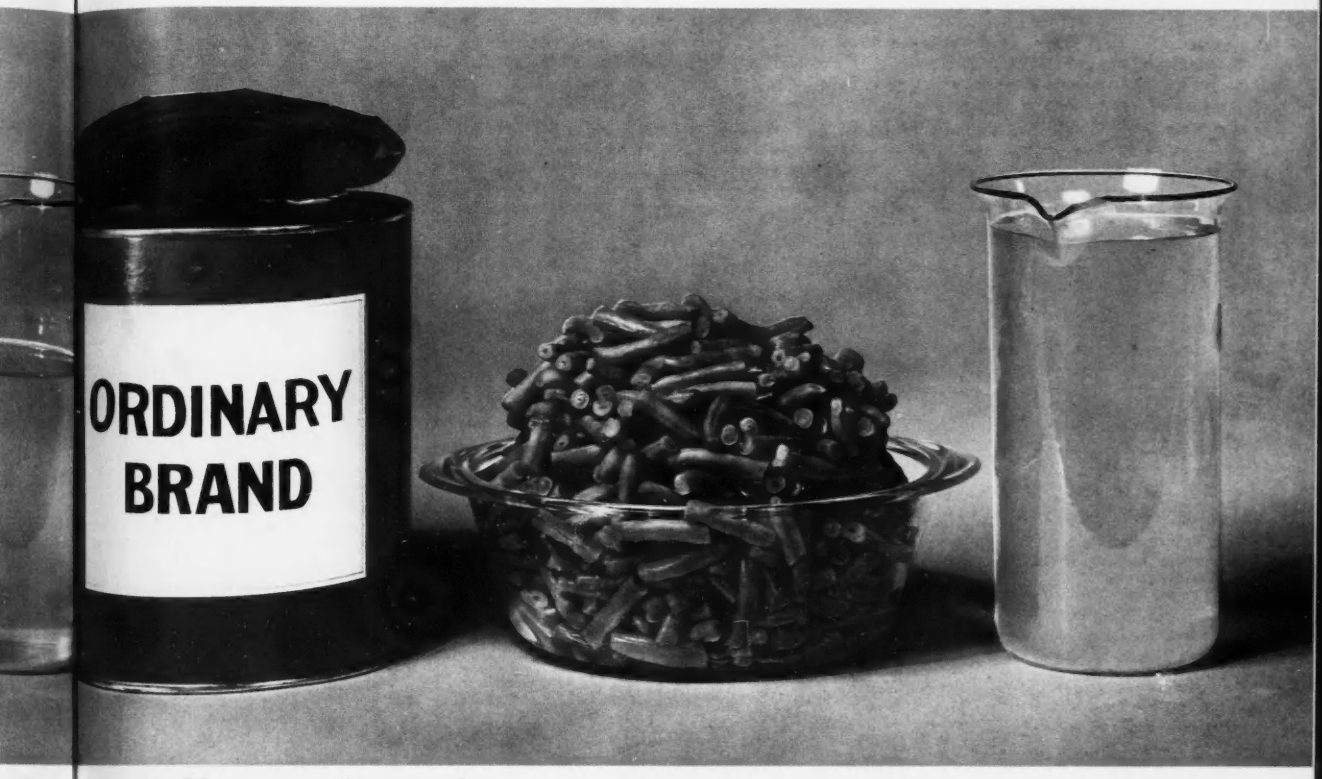
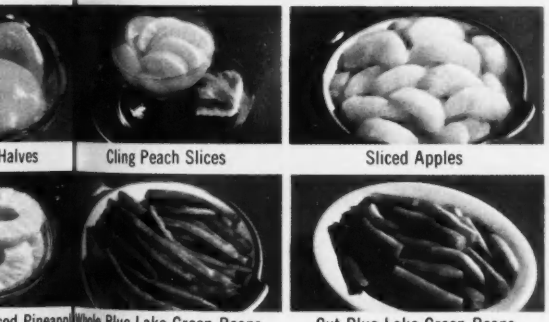


ains ny ordinary brand



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INSTITUTIONS

Vol. 38, January, 1956
* Let manufacturers make your soup.—p. 13.
* Well-planned campaign promotes increased safety awareness.—p. 18.
* Serving successful seafood.—p. 98.
* Methods of serving seafood.—p. 100.
* How to prepare shellfish.—p. 102.
* How to cook fish from fresh and salt waters.—p. 112.
From the notebooks of the experienced.—p. 119.
New ways to blend lemon and seafood.—p. 124.
Distinguished sauces for fish.—p. 125.

Canned Soup. The processor comes to the aid of the economy-minded operator by taking over one of the most laborious jobs in the kitchen—the preparation of soups. Long hours of trimming meat, rinsing and cutting bones, cleaning and dicing vegetables, and supervising the stock pot can tie up expensive equipment and labor. Canned soups are economical to serve, especially if a variety of soups is offered. One manufacturer estimates that an operation serving its full line of fifteen soups will have a food cost of about 2½ cents per serving. The contents of the adaptable can of condensed soup may also be used as the base for house specialties or can be blended with other canned soups to work a quick trick of menu magic.

Safety Campaign. Good safety records don't just happen; they are "engineered." A food service management organization describes a safety program which has resulted in a greater safety awareness on the part of employees and a noticeable improvement in the accident trend. A group of integrated committees devoted exclusively to safety were organized. A home office safety committee directs the over-all program. This committee follows the accident trend of the company, develops new accident-prevention methods, and coordinates successful procedures originating in the field. The committee assigns members to make inspection of the food service facilities at every operation and make recommendations for the correction of hazardous conditions. Pertinent literature is distributed and safety posters are forwarded to the managers. Cafeteria safety committees see safety in action, watch for unsafe working conditions, and report them to the managers.

Serving Seafood. Per capita fish consumption in the United States is low but is steadily increasing, due to improved processing and distributing facilities and the fact that the nutritive value of fish as a high quality food is more widely recognized. There are 160 varieties of edible fish on the market today—fish that can be prepared in delectable, mouth-watering dishes to satisfy a gourmet's taste. The manner in which a fish is to be cooked will influence the form in which it is purchased. Of the two forms of fillets, the single fillet is the one most commonly used. Fish steaks are usually cut ¾ to 1 in. thick. Fish sticks are cut lengthwise or crosswise from fillets or steaks into portions of uniform size. So phenomenal has been the increase in the sale of frozen fish sticks during recent years that the cooked product may be on its way to dethroning the ever-popular hamburger and hotdog! Reproduced with this article is a "guide for buying fish," compiled by the Fish and Wildlife Service. This tabular-form listing shows species; if a fat or lean fish; usual market range of round fish in pounds; usual market forms; main production areas; and main market areas.

Cooking Seafood. Fish in quantity food operations is more frequently deep fried than cooked in any other way. Instructions for deep frying are given here, as well as a discussion of other fish preparation methods: broiling, pan frying or sauteing, steaming, baking, and poaching. Fish with the exception of shellfish should never be boiled but simmered or poached. The use of herbs, fish stock, or wine is recommended but sparingly, as the delicate flavor of the fish is easily overwhelmed.

Preparing Shellfish. This article deals with selection, preparation, and cooking of shrimp, lobster, crab, clams, scallops, and oysters. Many recipes are included, some featuring distinctive seafood dishes from famous eating places.

Cooking Fresh and Salt Water Fish. Specific cooking instructions are given for halibut, pompano, red snapper, cod, flounder, haddock, mackerel, shad, swordfish, whitefish, chubs, and salmon (all five varieties). Recipes from famous eating places in such cities as New Orleans, Denver, Chicago, Washington, Miami, and Cincinnati are featured.

Tips on Fish Cookery. Thirty valuable tips are listed here from the "notebooks of the experienced." They

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JOHN SEXTON & CO., CHICAGO, 1956

include interesting suggestions for garnishes, sauces, and marinades; ways to heighten color and enhance flavor; and unusual additions to old recipes.

THE MODERN HOSPITAL

Vol. 86, January, 1956

* Patients learn why they eat what they eat. E. Gee.—p. 112.

Before buying resilient flooring. J. F. Rhilinger.—p. 124.

Planned Diet Instruction. Dietitians at the Maine General Hospital, Portland, introduce the patient to a selective menu shortly after admission and guide him in meal selection each day until discharge. For the patient on a therapeutic diet, the hospital has its own diet manual. If a low-residue diet is required, for example, the dietitian goes over this diet with the patient, giving him a printed copy of the diet, so that he knows what to expect and why specific food items are included. Weekly conferences are held to discuss patients who are on therapeutic diets. Teaching the clinic patient is also a duty of the dietary department. Printed material is used to familiarize the patient with the diet and to save teaching time for the dietitian. In the case of a child patient on a therapeutic diet, the dietitian instructs the mother. If the family income is low, she teaches the use of nonfat dry milk solids, low-cost cuts of meat, and fruits and vegetables in season. The diabetic patient, especially the one on insulin, requires a great deal of instruction and at Maine General Hospital, two types of diabetic diets are prescribed: the older diet, which calls for the use of the 5, 10, and 15 per cent fruits and vegetables; and the newer diabetic diet which is based on the "Meal Planning and Exchange Lists."

RESTAURANT MANAGEMENT

Vol. 77, December, 1955

* Profit in portions. R. McDaniel.—p. 46.
* Living with the union. G. P. Schmidt.—p. 58.
* Safety in the kitchen. p. 62.

Vol. 78, January, 1956

* New slants on pork and beef. A. Easton.—p. 64.

Profit in Portions. A Houston, Texas chain of "drive-in" restaurants attributes its success to portion control of all food served. A central commissary processes and portions meat for hamburger, slices ham and cheese, and delivers these food items to each unit daily. Chicken is purchased in parts, and each unit is told the number and type of pieces for each chicken order. Shrimp is purchased 18 to the pound, assuring uniform size. Fish is the only major food item not weighed and portioned at headquarters, although the fillets *are* weighed before serving in each unit. Barbecued meats are prepared at central headquarters and delivered in sauce to each unit. Disposable cartons are used for serving French fries, which are filled to a marked line to assure equal portions. Physical inventory of each unit is taken each day, and when this daily inventory shows that a unit is using too much of a food item, such as relish, in proportion to its sales, a checker is sent to the unit to find and correct the error.

Living with the Union. Though the contract is signed, collective bargaining continues in many ways. Bargaining occasionally with union representatives on the administration and enforcement of the labor contract is encountered; experience may suggest changes, improvements, or contract modifications to both union and employer. The author suggests ideas to improve the contract and ways to settle future differences.

Safety in the Kitchen. Careful selection of equipment and a good safety program that includes detailed instructions can reduce the chance of serious accidents. Topics discussed are: the proper use of knives, sharp-edged tools, and mechanical equipment; danger of burns and scalds from cooking food; floor hazards; hot-water protection; safe use of electrical equipment; adequate storage space to insure safety in storing items; and use of poisonous cleaning materials.

Pork and Beef. Five ways to serve beef profitably and attractively in leftover dishes are offered. Included is an appetizing recipe for beef stew which utilizes cooked beef pot roast with fresh vegetables and yields twenty-five portions. Twelve pork combinations are suggested featuring pork with fruits or foods of definite flavor and light texture which combine well with the hearty meat flavor.

It must be better...
your standards are higher!

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Downyflake
is made exclusively for
RESTAURANTS and INSTITUTIONS

Traditionally, you in the restaurant and institution field, have always demanded better quality. Downyflake mixes make the best bakery goods money can buy.

*XTA, the Xtra Taste Appeal ingredient, was the foundation of Downyflake success when this original, and first, baking mix was introduced. XTA—backed by constant research, formulation, skillful blending and the finest ingredients the market affords—has helped Downyflake maintain its leadership for a third of a century.

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Gentlemen: ☐ Send me your Downyflake Mix Recipe Book
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flavors cream gravies and vegetables...

PLATES WON'T COME BACK LIKE THIS!

Add a new flavor appeal for diner's enjoyment with MAGGI® Granulated Chicken Bouillon Cubes!

Just add Maggi's Granulated Chicken Bouillon Cubes to the food as it's cooking . . . you'll be delighted with the improved flavor and taste of the foods you serve. And so will your diners!

Maggi Granulated Chicken Bouillon dissolves quickly to add appetizing flavor to cream gravies, soups and stews...improves the taste of vegetables.

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Send coupon today . . . we'll send you a big 4 oz. jar of Maggi Granulated Chicken Bouillon and the famous Maggi Recipe Booklet. Judge Maggi's value for yourself—free!

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Box No. B-80
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Please send me FREE, 4 oz. jar of Maggi Granulated Chicken Bouillon Cubes and recipe booklet.

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News Notes

Going to the Second International Congress of Dietetics? Months have an alarming habit of seeming to be compressed into a few days. We suggest that you avoid this disconcerting experience by beginning now to make preparations for your trip to the Second International Dietetic Congress in Rome, September 10 to 14.

Your passport picture will reflect a far more pleasing image, if you attend to its taking now rather than during the last hectic month.

A highly important requisite to the trip abroad is a passport, the obtaining of which requires approximately a month. You may obtain an application from the clerk of the federal or state court, usually located at the county seat. The accompanying fee is $10. You can save yourself time and effort when you go to the county seat to file your application if you are armed with your birth certificate and two passport pictures. Your photographer will know the specifications pertaining to size and nonglossy paper stock. It will be necessary also for you to be accompanied by someone who has known you for at least two years, to substantiate your identification.

A visa will not be needed for travel in Italy or any other country in Western Europe.

A second prerequisite, after the passport, for your continental adventure is a current smallpox vaccination certificate. You may choose to protect yourself further by having typhoid shots.

The most pressing matter for your attention is the making of travel reservations. All America seems to be bent on European treks during the summer months, and the competition for both boat and plane space will be great.

Be sure to notify the headquarters office of your intentions to attend the Congress, so that you may receive a copy of the tentative program, the various tours, and future mailings.

50th Anniversary of Food and Drug Laws. "Kick-off" luncheon for the year-long celebration to commemorate fifty years of food, drug, and cosmetic laws in the U. S. was held on January 11 in Washington. More than 150 distinguished lawmakers, industrial leaders, food and drug officials, consumer representatives, and members of the press heard the 1906 first acts described as perhaps the most important peacetime legislation which has passed since the country's founding.

Other events thus far in the program of celebration have been a speech honoring the famous law at the National Canners Association convention in Atlantic City, January 17, and the proclamation by the Governor of New Jersey, Robert B. Meyner, of "New Jersey Food and Drug Law Week," January 20 to 26. A joint resolution has also been introduced in Congress, requesting the President to set aside a similar week to observe fifty years of pure food laws. Support for this program of commemoration, which is being sponsored by the Association of Food and Drug Officials of the United States, is being given by a number of other organizations, some of which are planning special observances at their annual meetings and publishing special editorials in their official publications.

The Food Industries Committee of the 50th Anniversary Committee, which is headed by Siert F. Riepma, President, National Association of Margarine Manufacturers, has prepared a work kit for the use of firms and trade groups in the food industry to assist them in mapping events and observances for the 50th Anniversary celebration.

The American Dietetic Association is numbered among the organizations which are supporting this program.

Nutrition Training Course for African Workers. From October 4 until December 10, 1955, the second training course in nutrition for personnel expected to work in Africa was held in Marseilles, France. The course, which was presented in French, was jointly sponsored by the French government, the Food and Agriculture Organization

SPECIAL SUMMER COURSES AND WORKSHOPS

Drexel Institute of Technology, Philadelphia
SUBJECT: *Seminar in Food and Nutrition*
DATES: July 5–27
CREDIT: 3 term credits
DESCRIPTION: Survey of current research findings in the field of food and nutrition

SUBJECT: *Institutional Food Purchasing Problems*
DATES: June 25–August 3
CREDIT: 3 term credits
DESCRIPTION: Production, distribution, and storage of food supplies with emphasis on quality, grades, costs, and nutritive values. Field trips to observe wholesale and retail methods of merchandising.

Fontbonne College, St. Louis
SUBJECT: *Institute for Food Supervisors*
DATES: June 19–July 6
CREDIT: 0–4 hr.
DESCRIPTION: Personnel management with laboratory experience; equipment and sanitation; menu planning. This is first year of a three-year course, consisting of three weeks each summer for food service supervisors who have not had training in dietetics.

Montana State College, Bozeman
SUBJECT: *School Lunch Workshop*
DATES: June 27–30
CREDIT: none
DESCRIPTION: Workshop primary for cooks and managers; sponsored jointly by Montana State College and Montana Department of Education

Oregon State College, Corvallis
SUBJECT: *Workshop in Communications in Foods and Nutrition*
DATES: June 18–29
CREDIT: 3 hr.
DESCRIPTION: Will cover radio and television

Prairie View A. & M. College, Prairie View, Texas
SUBJECT: *Workshop in Nutrition*
DATES: June 6–July 14
CREDIT: 3 hr.
DESCRIPTION: Refresher course, with some public health nutrition

Simmons College, Boston
SUBJECT: *Nutrition Workshop*
DATES: June 25–29
CREDIT: 1 semester hr.

Southern Illinois University, Carbondale
SUBJECT: *Nutrition in the School Lunch*
DATES: June 18–23
CREDIT: 3 quarter hr.
DESCRIPTION: Study of the food needs of elementary and secondary age groups: food values; menu making; food preparation and service of school lunches

University of Tennessee, Martin Branch, Martin, Tennessee
SUBJECT: *Workshops for School Lunch Managers*
DATES: June
CREDIT: None
DESCRIPTION: Management practices, food purchasing and preparation. One week for new school lunch managers; one week for managers who have attended previous workshops.

More about our Cherry Glace Pie. Our costs were based on 28¢ a pound for frozen, pitted cherries, a 5¢ pie shell, and 20¢ a quart for milk. Incidentally, any fruit may be substituted for cherries . . . strawberries or peaches are particularly good!

Pour hot Jell-O Chocolate Pudding over miniature marshmallows (now carried by wholesalers to save you chopping time). Marshmallows rise to the surface to make **Pop-Up-Pudding!**

Quick way to "deluxe" a pie. Prepare Jell-O Instant Pudding & Pie Filling as package directs. Substitute a quart of light cream for one of the quarts of milk. Results: luxury flavor, smooth, creamy consistency, surprisingly low cost (about 37½¢ per pie!).

Chicken Cacciatore* thickened with Minute Tapioca lowers food and labor costs, ups volume, improves flavor!

Ever-Ready Baking Blend* takes the emergency out of daily baking. Just mix a big batch during a slack period for a head start on hot breads, baked desserts, cakes. It keeps indefinitely without refrigeration, thanks to Calumet Baking Powder's double action! Write for the master recipe and low-cost specialties that can be made from this blend.

***Write for these recipes:**

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Institutional
Products Division
Dept. E1-1-DA
White Plains, N. Y.

of the United Nations, and the World Health Organization. The work in Marseille will be followed by a period of practical experience in Africa. Approximately 145 lectures and a series of 45 practical work sessions made up the curriculum, which was focused on the nutritional problems peculiar to Africa, including the sociologic factors involved and the food resources of the continent. Some forty persons attended, including medical officers, pharmacists, chemists, agricultural experts, and veterinarians.

This training course is only one area of WHO's assistance in efforts to improve nutrition in Africa. By providing the services of two specialists, WHO is helping to further the work of a research group on malnutrition among infants being conducted by the Medical Research Council at Kampala, Uganda. It has also supplied consultants to assist governments of Basutoland, Uganda, and Tanganyika in nutrition surveys and planning programs to prevent and alleviate dietary deficiencies. Early this year, WHO's Inter-Regional Adviser on Nutrition visited Africa to study prevalent nutritional problems in connection with public health activities. WHO also has a fellowships program in Africa, under which, between 1950 and 1953, 92 fellowships in the region were granted. In 1954 and 1955, the total jumped to 216, and the program now covers 32 of the 43 countries and territories of the African Region.

Beriberi in Thailand. A field team of workers from the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) recently reported the prevalence of beriberi in northern Thailand, particularly among pregnant and nursing mothers, and ascribed it as due to use of highly milled rice. In the northeastern area of the country, where rice is handpounded, the field team found a relative absence of beriberi.

Endemic goiter was also found in a belt extending from Burma through northern Thailand into Yunnan Province in China. Studies are currently being made by FAO and WHO, in cooperation with the Thai Nutrition Division, Department of Science, to learn the causes of this endemic goiter and to recommend remedial steps. Meanwhile, the team has recommended iodine enrichment of salt in the area. The level of enrichment in this instance will be much higher than in other countries, as the northern Thais consumes an average of only 3 gm. salt per capita per day, while those in other areas average 7 to 10 gm. Those living in the northern Thailand derive salt in their diet from fish sauce, fermented soybean, and so on, which lowers their intake of table salt.

Harvard Scholarships. Dietitians with a college degree and satisfactory field experience are among those listed as being eligible for scholarships for the academic year 1956–57 at Harvard University School of Public Health. Scholarship applicants must be eligible for admission to the School as a candidate for one of the following degrees: Master of Public Health, Doctor of Public Health, Master of Science in Hygiene, Doctor of Science in Hygiene, Master of Industrial Health. Scholarships range from part tuition to tuition plus a stipend, according to the qualifications and financial needs of the applicants. The Scholarship Funds are limited and primarily intended for citizens of the U. S. In general, preferences will be given to applicants under thirty-five years of age.

Plentiful Foods MONTHLY LIST

The following foods are listed by the U.S.D.A. as being plentiful in March:

Protein foods

Beef
Chickens—broilers and fryers
Milk and other dairy products
Pork
Tuna canned in oil

Other foods

Cherries, canned and frozen
Dates
Grapefruit
Lard
Peanut butter
Potatoes
Rice

Nutrition Conference. Wayne University College of Medicine, Detroit, will sponsor its Second Nutrition Conference on April 13. Speakers on the general subject, "Nutrition and the Maintenance of Tissue Structure and Functions," will include Dr. Albert G. Hogan, University of Missouri; Bertha S. Burke, Harvard University, Boston; and Dr. William J. Darby, Vanderbilt University, Nashville. Further information may be obtained from the Department of Physiological Chemistry, Wayne University College of Medicine, Detroit 7.

Nutrition Directors' Association. The Association of State and Territorial Public Health Directors has elected the following officers to serve for two years from 1955–57: President, Alice H. Smith, Michigan Department of Health, Lansing; President-Elect, John H. Browe, M.D., Nutrition Director, New York State Department of Health; and Secretary-Treasurer, Ann R. Matthews, Maryland Department of Health, Baltimore.

Meetings. May 21 to 24 will be the dates of the 41st Annual Convention of the *Catholic Hospital Association* in Milwaukee.

The 20th *Congrès International de Physiologie* will be held in Bruxelles, Belgium, July 30 to August 4, 1956.

Government Publications. A new revision of the booklet "A Fruit and Vegetable Buying Guide for Consumers" by the Fruit and Vegetable Division, Agricultural Marketing Service, U.S.D.A., has been issued as Home and Garden Bulletin No. 21. In it, specific buying hints for twenty-seven fruits, including varieties suitable for different purposes,

are given. Similar treatment is accorded forty-seven different vegetables and seven melons. In addition, nine "general hints well worth following," supply down-to-earth information for the consumer buyer of fresh produce. Copies of this booklet may be ordered from the Government Printing Office, Washington 25, D. C. for 20 cents a copy.

Another release of the Agricultural Marketing Service is a statistical report "Consumer Purchases of Selected Fruits and Juices by Regions and Retail Outlets—July–Sept. 1955." Data on the consumer market for frozen concentrated juices and ades, canned single-strength juices; and fresh citrus fruits, including oranges, grapefruit, and lemons. Figures are presented according to product and according to region.

Newest publication from the Quartermaster Food and Container Institute of the Armed Forces is *Precooked Frozen Foods*. It is No. 7 of the Institute's series on Food Stability. The purpose of the symposium which this booklet reports was to learn the present status of knowledge of precooked frozen foods and to point out problems to be solved. Four general topics, with papers under each heading, were discussed and are reported: "Precooked Frozen Foods in Use"; "Preparation and Processing"; "Quality Control and Stability"; and "Microbiological Aspects." Copies may be obtained from the Quartermaster Food and Container Institute, 1819 West Pershing Road, Chicago 9.

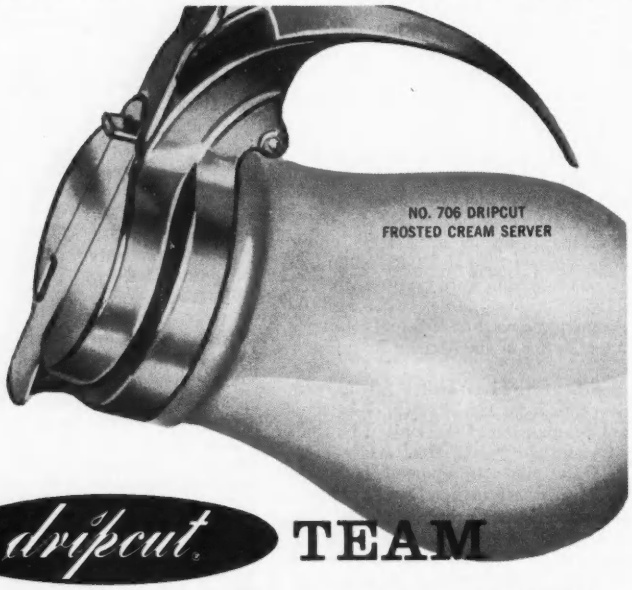
Meat Hygiene Report. An FAO/WHO expert committee on meat hygiene composed of public health experts and veterinarians has recently prepared its first report, setting forth certain fundamental principles of meat hygiene and making recommendations which are valid for both economically developed and less-advanced countries. The importance of our ability to utilize meat supplies to the fullest possible extent is pointed up by present world scarcity of protein foods. In addition to the nutritional aspect of meat hygiene, there is a health problem; even in countries with a relatively high standard of hygiene, more than half of the outbreaks of epidemics of foodborne diseases are caused by meat, particularly processed meat.

This report includes ways of improving the construction, management, and use of abattoirs from the standpoint of reducing the risk of contamination and facilitating the detection of parasitic infestations and disease of the animals. The role of the laboratory in meat hygiene is given special attention. One section deals with compulsory notification of cases of food poisoning and the epidemiologic investigations which supply information on pathogenic agents more frequently responsible and the food incriminated.

This report, which is WHO Technical Report Series No. 999 and FAO Agricultural Study No. 30, is available from International Documents Service, Columbia University Press, New York City, for 60 cents a copy. Title of the booklet is: "Joint FAO/WHO Expert Committee on Meat Hygiene—First Report."

School Lunch and School Milk Programs. According to the U.S.D.A., in the first half of the current school year, the number of children eating complete lunches under the National School Lunch Program was up 10 per cent over last year, and the number of schools approved for the Special School Milk Program has risen 48 per cent over last year's peak participation. In October, 9,400,000 children were eating lunches with milk under the School Lunch Program, and over 2 million children were participating in the milk-only feature of the National School Lunch Program. This makes total participation nearly 11 million.

Grapefruit Marketing Research. A market test of frozen grapefruit sections conducted by the U.S.D.A. indicated that this product may be a promising outlet for this citrus fruit. In Erie, Pennsylvania, during an eleven-week test period, sales of frozen grapefruit sections ran second only to frozen strawberries when compared with other frozen fruits. The market study was implemented for four weeks by a special promotional campaign by the Florida Citrus Commission. A household survey indicated that about half of the homemakers interviewed knew about the new product, two in ten had bought it, and of these, eight said they liked the natural flavor and freshness. Some thought the product



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SAVES RESTAURANT $240.00 A YEAR!

Replacing old-fashioned open cream pitchers and cube sugar in a popular mid-western restaurant,* four dozen Dripcut Creamettes and Sugar Servers (1) save over $20 in cream and sugar every month, and permit better, more sanitary customer service, (2) paid their own cost in just a few months.

Write for FREE FOLDER, "23 Ways to Cut Cost"...

Dripcut and Starline Products
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*(Name of restaurant on request)

Enriched Bread...

in the Ideal Reducing Diet

In reducing, the primary consideration is the establishment of a negative caloric balance as well as the maintenance of an optimal nutritional state in the obese person. For achieving this objective "the ideal reducing diet . . . not necessarily devoid of any food present in the normal diet" includes "meat, poultry, fish, eggs, milk, and other dairy products, leafy green and yellow vegetables, citrus fruits, and enriched and whole grain products . . . all desirable and necessary" foods.*

High in palatability and high in many nutrients, enriched bread shares notably in helping make the reducing regimen appealing and adequate nutritionally. In so doing it helps "to assure weight reduction without irritability and personality change" as well as "to avoid self defeat due to physical weakness and consequent inactivity."* Furthermore, the "ideal reducing diet" makes for increased likelihood of a permanent change from excessive eating to normal food habits "tuned to self control rather than outright abnegation."

The table presented below shows that 4 to 6 average slices of enriched bread serve to good advantage nutritionally in reducing diets. Providing generous amounts of protein, B vitamins, and minerals, enriched bread goes far toward making the low caloric regimen adequate in these nutrients. Its protein, containing an average of 10.5 per cent of milk protein, functions for growth and repair of tissues as well as for maintenance. Fresh or toasted, or as tasty sandwiches, enriched bread provides eating satisfaction, an essential for making the reducing regimen tolerable.

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

Contribution of 6 Slices of Enriched Bread

	Nutrients and Calories	Percentages of Allowances**
Protein	11.7 Gm.	18%
Thiamine	0.33 mg.	22
Niacin	3.0 mg.	20
Riboflavin	0.21 mg.	13
Iron	3.3 mg.	28
Calcium (average)	122 mg.	15
Calories	379	13

*Berryman, G. H.: Obesity—A Brief Review of the Problem, Metabolism 3:544 (Nov.) 1954.

**Percentages of daily allowances for fairly active man 45 years of age, 67 inches in height, and weighing 143 pounds: Recommended Dietary Allowances, Washington, D.C., National Academy of Sciences—National Research Council Publication 302, 1953.

AMERICAN BAKERS ASSOCIATION 20 North Wacker Drive • Chicago 6, Illinois

too sweet and some felt that the 10-oz. cans were too small. At least one processor has changed his pack as a result of these findings.

Another study, this one of canned grapefruit juice, was conducted by the U.S.D.A., in Indianapolis. Researchers visited 640 representative households to learn from homemakers the characteristics preferred in canned grapefruit juice. As part of the survey, homemakers were given samples of juice to taste and indicate a preference. Samples included unsweetened juice and four samples with varying degrees of sweetness. Over half the homemakers preferred the sweetened juice and found the very tart product less appetizing. To these homemakers, a most important characteristic in making this product appeal to consumers is what the researchers term the "acid-sweet level."

Citrus growers in Florida in recent years have been concerned over the generally unsatisfactory prices for grapefruit, and efforts are being made to increase sales through expanding present markets and developing new outlets, such as the frozen grapefruit sections.

News of State Associations

California Dietetic Association. The *Sacramento Region* of the California Dietetic Association has been granted membership in the Sacramento Community Welfare Council.

In *Santa Barbara*, dietitians cooperated in February with the Santa Barbara County Heart Association in a series of demonstrations and discussions on sodium-restricted diets. Four meetings were scheduled. Attendance was limited to those referred by their physicians . . . The January meeting of the Santa Barbara region featured a discussion on "Food Misinformation."

Massachusetts Dietetic Association. A nutrition workshop, sponsored by the Education Section of the Massachusetts Dietetic Association, was held at Boston University School of Nursing on November 18 and 19, 1955. A two-day program of panel discussions, work groups, exhibits, and films gave emphasis to current trends in nursing education. Actual practices in nutrition education in Massachusetts were scrutinized. Participants included nutrition and nursing instructors in nursing schools throughout the state. As a result of the workshop, a steering committee has been appointed to work out details for a workshop in nutrition for nursing and nutrition instructors and administrators to be offered as a 2-credit course at Boston University.

The Massachusetts Association has been invited by the Massachusetts Health Council to join with other authorities in the health field in an experimental thirteen-week radio series of 5-min. health bulletins. Scripts have been developed on child feeding, weight reduction, food facts and fallacies, and diabetes and diets by Massachusetts dietitians.

Virginia Dietetic Association. A $500 bi-annual scholarship for graduate study is being offered to any dietitian who is a resident of Virginia at the time of application and has been a member of the Virginia Dietetic Association for at least one year. This scholarship is unique in that it is the first to be granted for graduate work by a state association.

Association Activities

State Meetings. A.D.A. representatives are attending the following state dietetic association meetings this month:

March 2–3—Martha N. Lewis, Alabama Dietetic Association, Mobile

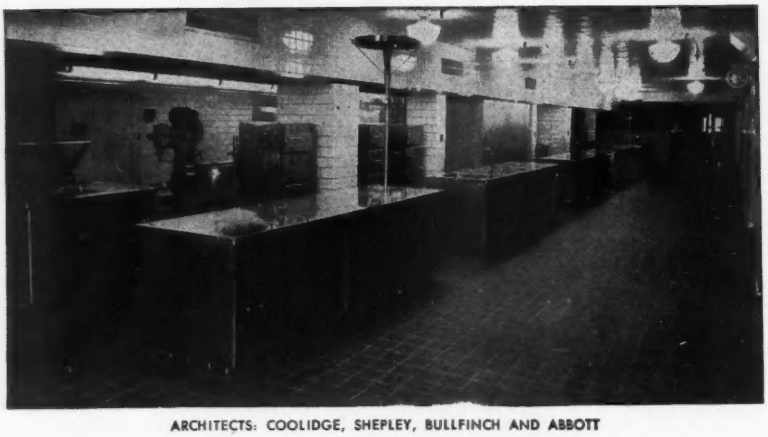
March 8–9—Winifred Howard Erickson, Illinois Dietetic Association, Chicago

March 16–17—Marguerite L. Pettee, Oklahoma Dietetic Association, Oklahoma City

March 22–24—May S. Reynolds, Ph.D., Virginia Dietetic Association, Charlottesville

March 22–24—Ercel S. Eppright, Ph.D., Texas Dietetic Association, Lubbock

A.D.A. Exhibit. The annual meeting of the Chicago Dental Society was held February 5 through 8 in Chicago. The theme of the A.D.A. booth was "Nutrition and Dental Health." With over 14,000 visitors, the dental convention was one of the largest held in that city during February. Marie Matte was chairman of the booth, with nearly twenty members from the Chicago Dietetic Association serving as attendants. Included in the



ARCHITECTS: COOLIDGE, SHEPLEY, BULLFINCH AND ABBOTT

use Van's long experience on hospital food service

● The picture above of the main kitchen of the new sixteen-story Hartford Hospital well illustrates the work Van has done equipping hospitals large and small for food service for more than a century.

● When you see an unusually fine food service installation, you will undoubtedly find Van's name plate on the equipment.

● If you are planning food service equipment improvements, make use of Van's skill and experience. Illustrations of such installations are in Van's Book, available now.

The John Van Range Co.

EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD

Branches in Principle Cities

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protein for breakfast

in a delicious, new ready-to-eat cereal form

You know—as we do—that one of the keys to good health is protein. And that it's as important at breakfast as at any meal of the day.

Now—with Kellogg's Special K—you can provide the kind of protein they need at breakfast (or any time of the day): *concentrated high-quality protein in a delicious new ready-to-eat cereal form.*

Special K contains more high-quality protein than any other leading cereal—hot or cold. About *twice* their average!

The surprising thing is that with all its beneficial qualities (including extraordinary vitamin values), Special K is unusually tempting to eat. One food authority told us: "It's amazing that a cereal with so much solid nourishment could be so light and tasty."

Special K is perhaps the greatest achievement in our 50-year history. After you read this nutrition story, we think you'll know why.

THE NUTRITION STORY OF SPECIAL K

PROTEIN High-quality protein from grain, milk, yeast. Special K is the only leading cereal containing added costly, protein-rich wheat gluten and wheat germ. One serving, with milk, supplies 15% of an adult male's daily recommended allowance.

VITAMIN D A full day's recommended allowance. (Recommended daily allowance for children and expectant and nursing mothers. Recommended allowance of other adults not specified.)

VITAMIN B_1 (thiamine) One-fourth of a day's recommended allowance.

VITAMIN B_2 (riboflavin) More than 30% of a day's recommended allowance.

VITAMIN C One-eighth of a day's recommended allowance.

NIACINAMIDE More than 30% of a day's recommended allowance.

VITAMIN B_{12} As you know, scientists have not fully determined human recommended allowances. Special K contains an amount judged by authorities to equal a day's recommended allowance.

COPPER-IRON More than one-third of a day's recommended allowance of each.

Special K also contains FOLACIN, a nutritionally significant vitamin on which exact recommended allowances have not been determined, plus CALCIUM, PHOSPHORUS, IODINE.

Kellogg's

OF BATTLE CREEK

Kellogg's Corn Flakes, Special K, Rice Krispies, Pep, Sugar Pops, Sugar Frosted Flakes, Sugar Smacks, Shredded Wheat, Raisin Bran, 40% Bran Flakes, All-Bran, Corn Soya.

For complete information write for our free booklet, "Common-sense Nutrition and Special K" c/o Kellogg Company, Institutional Division, Battle Creek, Michigan.

leaflets distributed was the newly revised "The Best of Health to You."

A.H.A. Institute. An A.H.A. Institute in Hospital Dietetic Administration is being held March 12 to 16 in Chapel Hill, North Carolina. The North Carolina Dietetic Association and North Carolina Hospital Association are co-sponsors and hosts for the meeting.

A.D.A. Is Represented. Lucille Refshauge and Anna dePlanter Bowes, as members of the National Health Council, will attend the 1956 *National Health Forum* in New York City March 21 and 22. Doris Johnson, Ph.D., a member of the Council's Board, will also be present.

Dr. Martha M. Eliot, honorary A.D.A. member, participated on a panel, "How We Work Together" during the Joint Conference on Children and Youth, December 5 and 6, 1955, in Washington, D.C. The theme for the meeting was "A Look Ahead for Children and Youth." A business meeting of the National Advisory Council on State and Local Action for Children and Youth was included on the agenda.

Dr. Doris Johnson, as A.D.A. representative, participated in a panel discussion, "Meet Your Buyer," during the annual convention of the *National Institutional Wholesale Grocers Association* in Atlantic City, January 11 to 13.

A.A.A.S. Meeting. The 1955 meeting of the American Association for the Advancement of Science convened in Atlanta, December 27 to 30. Frances A. Johnston, Ph.D., Cornell University, Ithaca, New York, served as the Association representative on the Council. A number of changes in the constitution and by-laws and some amendments were approved. The majority of these changes simply clarified the meaning or brought the rules into accord with actual practice.

A resolution was passed stating support of a bill already proposed which will modify the McCarran-Walter Act and thus permit the travel of recognized foreign scholars and scientists to this country. A resolution proposed from the floor was also passed recommending that funds from the National Science Foundation and appropriate government agencies be used to supplement travel costs of U. S. citizens to attend scientific meetings and congresses in foreign countries.

A grant from the Carnegie Foundation to be used to improve teaching in science in the high schools of the country will be administered by the Association's Science Teaching Improvement Program.

A traveling library, set up by A.A.A.S., is available to high schools requesting it.

Monies formerly given for research by the A.A.A.S. to state academies of science will be given to promising high school students.

Dr. Laurence H. Snyder, Professor of Medical Genetics and Dean of the Graduate College at the University of Oklahoma, was elected as President-Elect.

Obituaries

Dr. Malcolm T. MacEachern. On February 3, Malcolm T. MacEachern, M.D., D.Sc., died at the age of seventy-four at his home in Chicago as a result of a cerebral hemorrhage. Dr. MacEachern was noted as an authority on hospital administration. For many years he was in charge of the hospital accreditation program of the American College of Surgeons, and from 1949 until 1951 was Director of that organization. He founded the course in hospital administration at Northwestern University in 1943 and served as its director until last year. He was also noted for his book, *Hospital Organization and Management*, which was considered "bible" on the subject in this country.

He had been president of the American Hospital Association, American Protestant Hospital Association, and the Chicago Medical Society. In 1939 he received the Award of Merit of the American Hospital Association.

Dr. MacEachern's interest in dietetics and its place in hospital administration was demonstrated in his article, "Advances in Dietetics from the Hospital Viewpoint" which appeared in the Silver Anniversary issue of the JOURNAL in June 1949. He had also served as a member of the A.D.A. Advisory Board from 1943 to 1946. In his work with the American College of Surgeons, he was largely responsible for the development of the standards for the dietary depart-

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ment which are now used in accrediting hospitals by the Joint Committee on Accreditation of Hospitals.

Although he had relinquished some of his activities within the last few years, he was still active in the field, and at the time of his death was Director of Professional Relations of the American Hospital Association. His loss in the field of hospital administration, where he had been a leader for more than a quarter of a century, will be keenly felt.

Jean Springer. Word has reached the A.D.A. office of the death on September 21, 1955, of Jean Springer, who was on the staff of the College of Medicine, University of Nebraska, Omaha. Miss Springer, who had been an A.D.A. member since 1944, had been employed also by the Veterans Administration; Foundation Hospital, New Orleans; and Michael Reese Hospital, Chicago.

News of Products and Services

Number 11 in the Ac'cent series of booklets of *Quantity Recipes*, recently released, features dishes made from canned soups. The recipes are prefaced with information on the use of Ac'cent, i.e., proportions appropriate for various foods, with a separate sections specifically on meats, fish, poultry, vegetables, soups, sauces, gravies, cheese dishes, and salads. The booklet presents sixteen recipes developed in the Home Economics Department of Campbell Soup Company and now featured by Ac'cent. Copies of the booklet may be obtained from International Minerals and Chemical Corporation.

Nu-Way Foods Co. is manufacturing a flavoring sauce, "Artie's Flavor Magic," which is designed for use in food preparation and also on the table. The sauce seals in juices, cuts shrinkage, speeds browning, restores cooked-out flavor, and acts as a tenderizer, the manufacturer says. It also colors and flavors gravy when added to pan fat. It is available in 4-oz. and 32-oz. sizes.

Rice Consumer Service, Inc. is currently distributing two sets of card files with quantity recipes. The first set contains fourteen recipes using rice in combination for school lunch programs. All but one (turkey rice soup) are listed as suitable for use in Type A lunches. On each 5 by 8 card are included not only ingredients for 50 and 100 portions, but suggested portion size, nutritional facts, information on equipment needed, and possible variations of the recipe at hand. This card set also includes six cards detailing the recommended methods for quantity cooking of rice by: stove top, electric range, stockpot steamer, steam-jacketed kettle, stove and oven steaming, and steam chest (direct steam).

The second set of recipe cards available from *Rice Consumer Service* presents recipes on 4 by 6 cards suitable for other types of institutional food service. Complete with dividers, the variety covered includes: rice main dishes, rice salads, rice desserts, rice side dishes, rice soups, and rice specialties, as well as cards detailing the various quantity methods of properly cooking rice listed above. These recipes are scaled for 25 and 50 servings. This set contains forty-two different recipes.

Reen 'O Sales Corporation announces a coffee stain remover for use on plastic cups and dinnerware, as well as in coffee and tea makers of any material. This product releases free oxygen in boiling hot water to bleach and loosen stains. It is odorless, non-toxic, and will not damage the surface of the dishes or utensils. It can be used also to remove stains of vegetable foods.

For the third successive year, the *Cereal Institute* and the *American Dairy Association* will sponsor a Cereal and Milk Spring Festival in April. The Cereal Institute's annual promotion of "Better Business Month" will be repeated again this year, in September.

Meterflo Dispensers is making a milk can cart to handle bulk milk cans. Used to load bulk milk dispensers, the cart transports 5- or 10-gal. dairy cans from storage room or truck to the dispenser, where the milk can is raised to loading position by means of a roller type elevator. A hand crank moves the elevator and the can upward to the correct position in the dispenser cabinet.

Robertshaw-Fulton Controls Co. has appointed Shirley Pemberton to the staff of its Home Economics Department.

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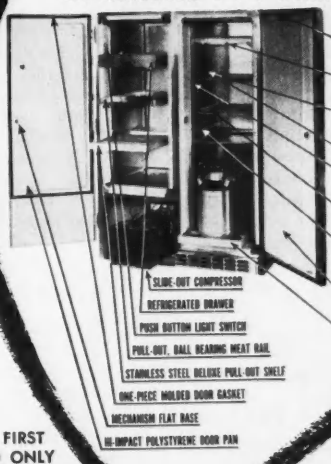

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Mrs. Pemberton was formerly Home Economist, International Milling Co.

The *Griswold Manufacturing Co.* is adding a counter model, electric hot plate to its custom-design counter line. Featuring a *Robertshaw* "Thermal Eye" which regulates the cooking temperature (135–400°F.), the hot plate measures 12 by 18 in., has four adjustable levelling legs, and is wired for standard 115, 208, and 230 voltages. It is made of heavy gauge stainless steel with chrome finish.

Electrically-heated versions of the gas-heated Tri-Saver Jr. and Sealweld Jr. coffee urns are now available from *S. Blickman*. These urns can be plugged in at any location and provide their own hot water supply in sufficient quantity to assure maximum capacity for coffee or tea. There are two standard sizes: 3 gal. coffee, 5 gal. water; or 5 gal. coffee, 8 gal. water. Both urns are of welded-stainless steel, crevice-free construction with leak-proof seams. Features include plastic handles for covers and faucets, metal gauge glass protectors, and heavy-duty, non-drip stainless steel faucets. The stainless steel liners are sloped at the bottom for full drainage.

Adolph's Ltd. has prepared a series of four colorful folders on the use of Adolph's Meat Tenderizer with: poultry and game birds, roast beef, variety meats, and in freezing. Cooking time tables are given in the folders on poultry, roast beef, and variety meats. In addition, the material on variety meats includes cooking instructions for: kidney, tongue, liver, heart, and sweetbreads and brains. The freezing folder presents suggestions for wrapping meat and frozen storage times.

New on the market are *Borden's* Molded Salads—flavored gelatin bases with fruits or vegetables added. Varieties include: cranberry salad, fruit cocktail, perfection salad, and pineapple salad. The molded salads may be spooned from the container or removed in one piece by unmolding. These salads must be stored under refrigeration but they should not be frozen. In the unopened container and stored at a temperature of 40 to 45°F., the molded salads will keep at their peak of flavor for at least three months. Once the container is opened, the salads should be used within two days. They are packaged in a 14-oz. plastic bowl with a snap-on lid.

The *W. K. Kellogg Co.* this year celebrates its 50th year in the food processing industry. Four Kellogg plants operate in this country and eight in foreign countries to produce the company's ready-to-eat cereals.

The *Quaker Oats Co.* is introducing "Scotch Brand" steel-cut oatmeal. One feature of the new product is the avoidance of waste—once cooked, it can be kept throughout the entire serving period or the whole day, and retains its flavor and body. Left-over oatmeal can be used for oatmeal cookies, muffins, or breads, and "Scotch Brand" has been successfully refrigerated for next day's use.

The "Cafeteria Pan Steam-Chef," product of the *Cleveland Range Company*, features quantity portion cooking. For example, cooked turkey and dressing is portioned and arranged in standard 18 by 26 in. bake pans and placed in the steamer compartment; within 3 min. it is ready for transfer to service plates. One steamer can prepare 100 or more servings each 3 min. Food can be steam cooked in standard cafeteria pans and placed directly on serving tables without transfer to serving trays, thus reducing handling, cleaning, and scouring of pots and pans in addition to reducing food damage. The "Cafeteria Pan Steam-Chef" can be operated with gas, electricity, or direct steam. It is built to accommodate twelve standard 12 by 20 in. or twenty-four half-size cafeteria pans. It can also be used with standard steaming baskets or with 18 by 26 in. trays.

"Steamcraft Cub," a 22-in. counter steamer manufactured by *The Cleveland Range Co.*, enables small establishments to use steam cookery. It can be used for both cooking and warming, as special controls change to warming heat as cooking is completed. An automatic water feed eliminates hand-filling and boiling dry. The door may be opened for food inspection during the cooking cycle without the need for pressure release or without disturbing the cooking cycle. The Steamcraft Cub holds three 12 by 20 in. or six 12 by 10 in. cafeteria pans, as well as wire baskets and other vessels.

Vulcan-Hart Manufacturing Co. recently acquired the Autosan Division of Colt Manufacturing Co. The dishwashers, sanitizing, and drying machines of

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the Autosan Division will now be sold under the name "Vulcan-Autosan."

Pillsbury's newest product for the institutional trade is Caramel Cake Mix. A complete product requiring the addition of liquid only, it is prepared for the oven in just three steps. The caramel flavor of the new mix combines well with: Creamy Fudge Frosting served plain or topped with coconut or nuts; Fluffy White Frosting; or a caramel frosting, recipe for which is given on each bag. Caramel Cake Mix is available in cases of six 5-lb. bags. Each case produces 48 8-in. layers, 558 114-oz. cupcakes, or 540 2 by 3 in. cuts of sheet cake.

The *Holly Corporation* is entering the food service equipment field with the acquisition of *Amcoin Corporation*. As part of the expansion program, the company has added 32,000 sq. ft. of factory space to be devoted exclusively to the manufacture of Amcoin's entire line of coffee, tea, and hot chocolate urns.

L. L. Antle & Co. is marketing "Anco Chicken Dumplings" in a new 8-oz. size. Packed 24 cans to the case, this "heat and serve" size offers the restaurateur or institutional user uniformity of portions and pre-determined cost, as well as versatility in adding variety to the menu.

A power meat saw which offers ample cutting capacity, large table area, and high-speed operation has been developed by *Toledo Scale Company*. Wheels measuring 16 in. and a working area of over 7 sq. ft. permit breaking operations on front or hind quarters of beef.

The *National Turkey Federation* announces the release of "Turkey's on the Menu," a 22-min., 16 mm. color motion picture which illustrates institutional turkey cookery. Cooking methods featured include braising, broiling, poaching-simmering, roast-poaching of cut-up turkey, and whole-roasting. Turkey dishes which are practical for every menu are shown and the movie depicts turkey's role in restaurants, coffee shops, lunch counters, drive-ins, service and country clubs, railroad dining cars, air and steamship lines, hospitals, industrial and school cafeterias, and mess establishments for the armed forces.

A booklet called "I'll Never Roast a Whole Turkey Again!" is also available from the *National Turkey Federation* and features cut-up turkey cookery.

The *National Turkey Federation* is also making available at no rental charge two other new educational, 16 mm., color, sound-on-film movies. One, "Anytime Is Turkey Time," is designed for the general consumer audience, while the second, "Make Mine Turkey," was prepared for the institutional-restaurant field. The films, each with a 22-min. running time, feature the latest and practical methods of preparing and cooking turkey.

The Vimco stainless steel dual temperature, self-contained refrigerator of *Victory Metal Manufacturing Corporation* features a combination 16 cu. ft. normal temperature area with a 16 cu. ft. freezer. Four shelf pieces adjust to any combination of bakery pan slides, stationary or pull-out meat rails, stationary or pull-out shelves and refrigerated drawers. Other features include sanitary wipe-out bottom; automatic defrosting and automatic interior lighting. The refrigerator is available in aluminum, baked white enamel, or porcelain finishes in 22, 32, and 54 cu. ft. capacities.

Jarvis & Jarvis is manufacturing a tubular-frame tray truck modeled after the J & J angle iron tray truck. The new model is furnished in two sizes with either four or five shelves in stainless steel or standard painted finish. It is designed with two 8-in. swivel and two 8-in. stationary casters, or four swivel casters with each end-caster equipped with a swivel lock.

Quantity recipes for canned salmon are available from the *Pacific Coast Canned Salmon Brokers*. Recipes for the following are included: creamed salmon with grean peas; salmon cakes; salmon loaf; salmon shortcake; cold salmon plate suggestions; salmon salad sandwich; and salmon cocktail.

"Redy-Rinse" is a liquid rinsing agent manufactured by *West Shore Manufacturing Company, Inc.* A quart bottle of the new rinse is attached to any meter which proportions wetting agents to dishwashers as a self-contained reservoir. It is said to be non-toxic, non-sudsing, quick drying without leaving spots or streaks on dishware, and eliminates hand wiping and special rinses. When used with commercial dishwashers, a ratio of 60 to 200 parts rinsing agent to 1,000,000 parts water is recommended; for hand rising, 1 tsp. rinsing agent per 4 gal. water.

Platecraft of America, Inc., is introducing a "metal-clad" chinaware designed for institutional use. The nickel-chrome plated ware is guaranteed by the manufacturer not to chip; to ward off blows that would crack or shatter other commercial china; and to keep beverages hot. Platecraft Metal-Clad chinaware does not tarnish, needs no polishing and never needs to be replated. Coffee pots, tea pots, sugar bowls, creamers, and casseroles are available in either a high-luster or a satin finish. Sterling silver plate is available at extra cost.

Sheffield Chemical Company, Inc. is now a separate operating division of *Sheffield Farms Company, Inc.* and will be known as *Sheffield Chemical, Division of Sheffield Farms Company, Inc.* The new division will continue to produce and sell products derived from milk.

The Coffee Brewing Institute, Inc., has released a report on its "Survey of Beverage Coffee," which details preferences of consumers patronizing public eating places. The effect of coffee on business, factors which consumers believe makes a good cup of coffee, and customers' drinking habits are among the topics reported in graphs and charts.

Gerber Products Company has revised its popular booklet, "Recipes for Toddlers." An important change is that all recipes are now interpreted in terms of cups and tablespoons. Included in the text is a measurement table covering all sizes of strained and junior food containers. Thus quantities called for in recipes can be correlated quickly with the size of container needed

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